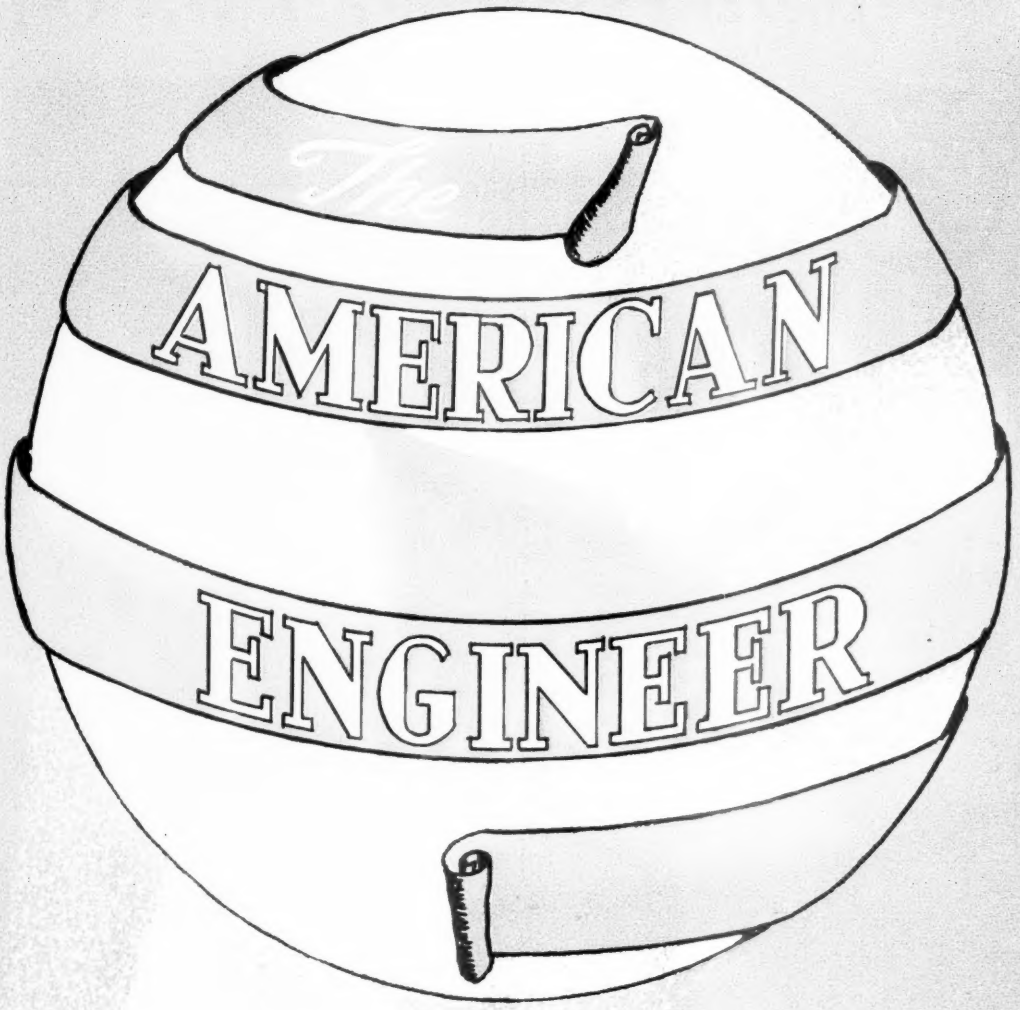
ENGINEERING
LIBRARY



MARCH, 1948

PROFESSIONAL ENGINEERS

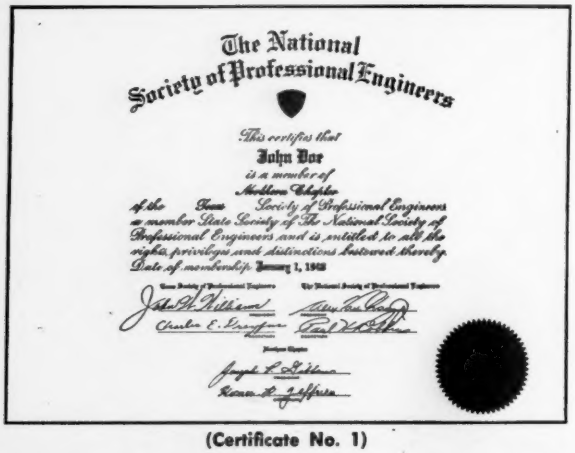
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
FOUNDED 1934

Are you recognized by this badge?

It is a testimonial to professional integrity—a signification that the wearer is a competent professional man and that his government has faith in his ability to practice his profession.

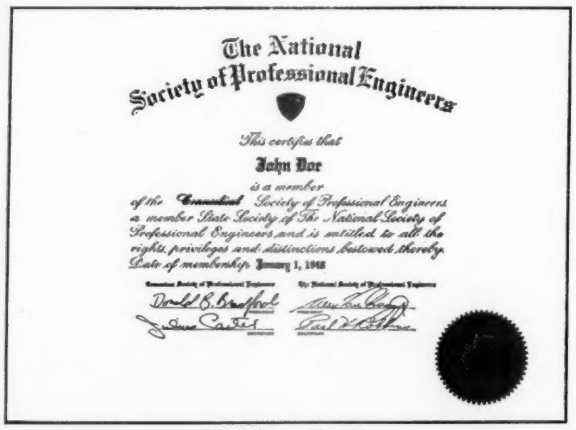
Are you recognized as a professional engineer—as a member of the National Society of Professional Engineers— by wearing the officially adopted badge of the Society? If not, let others know of your professional interest, qualifications and affiliations by ordering one of these insignia today. Merely fill in the attached order blank and send it to NSPE Headquarters in Washington, D. C.

And since you are sending in your order, do you have membership certificates for your office and your home? If not, now is the time to get one. You will remember, it looks like this:


The National Society of Professional Engineers

This certifies that
John Doe
is a member of
Northern Chapter
of the Texas Society of Professional Engineers
a member State Society of The National Society of Professional Engineers and is entitled to all the rights, privileges and distinctions bestowed thereby.
Date of membership January 1, 1948

(Certificate No. 1)


The National Society of Professional Engineers

This certifies that
John Doe
is a member
of the Connecticut Society of Professional Engineers
a member State Society of The National Society of Professional Engineers and is entitled to all the rights, privileges and distinctions bestowed thereby.
Date of membership January 1, 1948

(Certificate No. 2)

These items, the black enamel pin or watch charm with gold lettering and the membership certificate, are yours for $7.50. They may be purchased separately; pins or charms, $5.00 plus $1.00 jewelry tax; certificates, $1.50, including hand lettering. Please enclose your check with your order, payable to the National Society of Professional Engineers.

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
1359 Connecticut Avenue, N. W.
Washington 6, D. C.

I am enclosing my check in the amount of $..... for which please send me.

- ☐ Certificate No. 1 with Chapter designation, priced at $1.50
- ☐ Certificate No. 2 without Chapter designation, priced at $1.50
- ☐ Emblem, mounted as a charm priced at *$6.00
- ☐ Emblem, mounted as a pin priced at *$6.00

* These prices include tax.

Please engrave as follows: .....
Name

and mail to: .....
No. Street

.....
City Zone State

I am a member of the ..... Society of Professional Engineers.
State

(and if Certificate No. 1 is desired) .....
Chapter

(This space contributed by a national manufacturer who desires to remain anonymous)

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS FOUNDED 1934

The AMERICAN ENGINEER

Published monthly in the interest of the Engineering Profession

Editor
FRANKLIN F. PAGE

Business Manager
RUSSELL B. ALLEN

Publication Committee
C. GEORGE KRUEGER, Chairman

●

Editorial and Executive Offices
1359 Connecticut Avenue., N. W.
Washington 6, D. C.

●

THE
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
Headquarters:

1359 Connecticut Ave., N. W.
Washington 6, D. C.

President, ALEX VAN PRAAG, JR.
Vice-President, Warren & Van Pragg
447 Standard Office Bldg.
Decatur, Ill.

Vice-President, WILLIAM F. RYAN
Asst. Engineering Mgr., Stone & Webster Corp.
49 Federal Street
Boston, Mass.

Vice-President, LAWRENCE PETERSON
President, Lawrence Peterson & Associates
312 East Wisconsin Avenue
Milwaukee 2, Wisc.

Vice-President, ROBERT COLTHARP
Bartlett, Norris, Coltharp & Miller
108 East 10th Street
Austin, Texas

Vice-President, A. J. SHAVER
Colorado River Commission
209 South 3rd Street
Las Vegas, Nev.

Treasurer, RUSSELL B. ALLEN
Professor, Civil Engineering, University of Maryland
4610 Hartwick Road
College Park, Md.

Executive Director, PAUL H. ROBBINS
1359 Connecticut Avenue
Washington 6, D. C.

●

VOLUME 18, NUMBER 3 ● **MARCH 1948**

In This Issue

EDITORIALS 2

ONE ENGINEER'S FORMULA 3
By James C. Zeder, Chairman, Engineering Board, Chrysler Corp.

CANADA'S HANDLING OF ENGINEERS-IN-TRAINING 5
By Dean Alan E. Cameron, Nova Scotia Technical College

ENGINEERS' PART IN ATOMIC AGE 6

MAPE MEETING SCORES SUCCESS 7

EMERGENCY USE OF SMALL PLANTS 8
By John A. McPherson, Consulting Engineer, Greenville, S. C.

LEGISLATIVE COMMITTEE REPORT 10

STATE SOCIETY DIRECTORY 11

HOW FEDERAL GOVERNMENT EFFECTS THE ENGINEER 12-13

NATIONAL, STATE SOCIETY, CHAPTER NEWS 14

CONGRESS GETS MARSHALL RESOLUTION 20

SUPPORT ASKED FOR NSPE 21

TRUE GREATNESS REQUIRES "NEW LOOK" 22

Neither the American Engineer nor the National Society of Professional Engineers assumes any responsibility for statements or opinions expressed by contributors whose names identify the source of same.

Copyright — 1948 — The National Society of Professional Engineers.

* * *

Subscription Rates

$1.00 per year in advance to members of the National Society of Professional Engineers and its Affiliated Societies. $2.00 per year in advance to non-members in U.S.A. and its possessions, Canada, and Mexico. Foreign, $4.00 per year. Single copy 25c.

* * *

Entered as Second Class Matter February 6, 1948, at the Post Office, Washington, D. C., under the act of March 3, 1879.

Editorials

A Professional Lesson

Georgia Society is learning that in politics you have to fight fire with fire. And that many engineers who think they can remain aloof from politics while working to obtain civic betterment are dead wrong.

The lesson dates back to the 12th annual meeting of NSPE in Atlanta in December of 1946. Swiftly, suddenly in the midst of the meeting, fire turned the famed Winecoff Hotel into a holocaust in which 119 persons lost their lives.

Less than 12 hours after the last flames had been extinguished and while the true horror of the hotel fire was still being determined, a speaker at the NSPE convention urged the engineering profession to assume leadership in fire prevention work.

Officers of the Georgia Society took that suggestion seriously, sat down with the Georgia legislature and drafted a building safety law which was finally approved March 28, 1947.

This law gives the state responsibility for seeing that the state's citizens are not subjected to needless hazards in the buildings where they sleep, work and assemble. The law is strict, but it is also flexible, so that common sense may govern its enforcement and so that appeals may be taken when it works undue or unnecessary hardships on property owners.

It didn't however, meet the favor of the state's insurance commissioner. He favored a measure which would have made the chairman of the county commission in each of Georgia's 159 counties a deputy state fire marshal, and would have given him the right to pass on building safety measures.

The Georgia Society opposed that plan, not in the interest of politics but rather of saving lives. The Society wanted—and got—a Building Safety Council consisting of an architect, a structural engineer, a plumbing and heating contractor or engineer, an electrical contractor or engineer, a general contractor, a representative of labor, a building inspector or chief building inspector from a city of 25,000 population or larger, and the insurance commissioner. The Council is advisory.

The Society bill called for creation of the post of building safety director. That post went to W. P. Kennard, a member of the Georgia Society and an NSPE director from Georgia. His appointment was ratified by the Building Safety Council.

The Council has gone on record as being pleased with the work Kennard has done, and apparently considers him a very able and efficient administrator.

The insurance commissioner has, however, fired him. The commissioner indicates that Kennard's trouble was that he has been strictly enforcing the law he was employed to enforce. The commissioner says that the law does not have enough flexibility or elasticity.

The Atlanta Journal has expressed its concern over the possibility that political considerations might be entering into enforcement of a law to save human lives. One of its headlines reads: "Saving Lives Is More Important Than Politics in Fire Program."

The dismissal of Engineer Kennard provides an object lesson from which all engineers may benefit, namely:

Just as the engineer must spark campaigns for civic betterment in a spirit of civic mindedness, so also must the engineer remain on guard to see that the things for which he has campaigned, once obtained, are not forgotten.

The New Editor

Something new has been added.

It is The American Engineer's new editor. He comes to NSPE with high hopes for the future of the National Society, the State Societies, the local chapters and his own efforts in preaching the engineering profession's gospel to the public.

Son of a physician and surgeon, he is acutely aware of the need for the engineering profession growing into a place in the public consciousness until it holds a position comparable to that of the other major professions. He is more than a little aware, too, of the problems that will beset the profession, once that status is attained, in maintaining its position.

He assumes his job with the conviction that, as professional men, engineers are going to have an ever increasing part in civic activity—are going to have to participate, if you please, because their fellow Americans need now, as never before in history, to share in the knowledge which they possess in order to properly understand the problems confronting the nation and the world.

He has been impressed, as editor of a regional construction publication, of the high standards of ethics of professional engineers who are members of NSPE, state societies and local chapters. He pledges himself to do his best to maintain The American Engineer on as high a plane, and to carry out his assignments for the benefit of the Society, the state and local units and the individual member—so that no one may say he was a brake or roadblock in the advancement of the profession.

His office is pledged to assisting and stimulating the climb of the engineer to full professional prestige. He asks your advice and your aid in carrying out that pledge.

One Engineer's Formula—

For Making the Most of His Profession

BY JAMES C. ZEDER

Chairman, Engineering Board, Chrysler Corporation, Detroit

How much more successful most of us would be as engineers if, at the same time, we were somehow able to be more successful as individuals! How much more we could make of engineering if we could give the same effort and thought to engineering *ourselves* that we spend on materials and mechanisms.

This applies to all of us, and it doesn't matter what type of engineering progress we have in mind . . . it may be along the lines of research, of design, of some specific branch of science, or in the direction of greater executive responsibility. Each one of these objectives is important—all of them are necessary to the advancement of the profession. And fortunately we are enough different from each other in temperament and particular ability so that each direction of advancement represents a satisfactory goal for a certain number of us.

What we as engineers too often overlook is the fact that our individual success is measured not only by how much we know, but, of even greater importance, how much of our information we can pass on to others and how much of it gets into actual use. That in turn depends upon something more than an ability to solve technical problems. We must match that with an equal ability to make progress in fields beyond technology, so that our knowledge and experience can have practical application. More often than not, our real progress depends on how well we tackle the non-technical obstacles that frequently get in our way.

They're Bothersome

Yet, it is these non-technical obstacles that seriously bother us—that confront us with situations which make us uncertain and sometimes actually afraid. What we worry and complain about are such things as how can we get more recognition, more money, more and better equipment, or a better job. But these are things we can't secure all alone—somebody besides ourselves has to do something about them. Accordingly, to solve our really troublesome problems, to overcome the type of obstacles which most persistently block our progress, we engineers should spend more time and thought in what is frequently called "human engineering."

That in itself is a wide subject. So let's concentrate on the first step in such a project. That is to determine what engineering we should do on ourselves as individuals, to accelerate our progress. What can we do to improve our methods of handling difficult circumstances and of surmounting or getting around human obstacles?

Engineers Have Typical Complaints

As in any engineering problem, it's important to determine right at the beginning what the obstacles are which are most likely to be ahead. Let's look at a few of the typical circumstances that confront us as engineers.

1. "It is almost impossible to secure recognition or greater income."
2. "The company is not progressive.'
3. "Progress in my company can be gained only by the 'high pressure boys'."
4. "There's no future because there are too many older men ahead of me."
5. "There's no credit for routine work, and I never get the spectacular jobs."
6. "The management completely disregards the true importance of the field of engineering I'm in, so that little attention is paid to my work."
7. "There's no real money in engineering."
8. "Engineering doesn't have enough voice in management decisions affecting engineering."
9. "Engineering does the work, but someone else gets the credit."
10. "Engineers spend most of their time correcting other people's mistakes."

We could go on for quite a while, but those are enough to show you the type of circumstances I'm thinking about. There's neither the time nor the need to discuss each of these complaints individually. They're merely examples of difficulties which can do one of two things. If we let them, they can put an overpowering drag on our progress. On the other hand, they can be actual starting points for continued advancement, if we put them to work.

It all depends on US.

The seriousness of a complaint does not depend upon whether the circumstances are either worse or better than we think they are; instead, the important factor in the case is the attitude we take toward it. Too many times it is the state of mind that defeats us, far more seriously than the situation which prevails. As soon as we allow our attitude toward a complaint to degenerate into a state of chronic grumbling . . . usually referred to as "griping" . . . the more certain it is that we will be brought to a stop or even start sliding downhill.

Where Trouble Comes

Unfortunately, when we encounter obstacles outside our own back yard of engineering, we tend to throw away the precision tools of reasoning; instead, we start hacking away with the erratic implements of emotion. We lose all sense of proportion because, instead of using a steel rule, we try to size up the situation with an elastic tape measure. And the more disturbed we get, the more we stretch the tape!

(Continued on Page 4)

HELP! HELP!

Another appeal for NSPE members who may have back numbers of The American Engineer to return them to Washington headquarters has been made.

The issues are needed to partially replenish the stock of back numbers of the magazine maintained at NSPE. Particularly needed are the August and September issues, 1946, supplies of which are completely exhausted, and issues of 1934, 1935 and 1936. But contributions of any issues members may have will be appreciated.

Increase in interest in NSPE has brought a large number of requests for back copies, causing depletion of the supply.

Formula . . .

(Continued from Page 3)

The natural result is that we become uncertain and confused. The surest evidence that we are disorganized is our inability to get our mind free from the complaint long enough to go to work on ways to get around it. Since most of us can't think about two thoughts at the same time, the more we dwell on the unfairness, and the powerful forces of the circumstances, the more difficult we find it to move in any direction. Confidence, which is the surest stimulant to action, gives way to fear. Medical men tell us that prolonged fear actually injects serious poisons into the system. Certainly its ability to magnify and intensify the hazards of any course of action sets in a paralysis which resists the strongest kind of effort. So, when we permit a complaint to get under our skin, we give ourselves over to a drug that really disorganizes us. Among other things, it blunts the sharp edge of our initiative, it neutralizes the finest technical proficiency, and it completely disrupts our ability to exercise good judgment.

Suggests a Cure

If we expect to make progress as engineers we must become better engineers, of course; but we must also improve our ability to make a constructive approach to the circumstances that bother us. That being true, I think we could learn something from our usual engineering approach to problems involving physical laws. When you stop to think of it, we could have a lot of complaints against nature. Everywhere we turn we run into circumstances which slow down or limit our progress, or force us to go in some other direction. So what do we do . . . complain about it? Sure we do, but not very seriously, and not for long. Why? . . . because we have come to accept natural law not as a reason for personal complaint, but as a challenge. Instead of losing sleep over it, the engineer has concentrated his time on finding ways either of using the forces of nature or of avoiding harmful conflict with them.

Consistently we, as engineers, demonstrate that it's not the size of the obstacle but the constructive approach to its solution that's important. Present day engineering accomplishments prove that there is no ceiling, no door completely closed, when the attack is made in a constructive state of mind.

The more closely we study this whole subject, the more clearly one fact emerges. The natural laws that have been the roughest on us have forced us to do hard work; but that very effort has been one of our greatest sources of scientific progress. In other words, instead of holding us back, the obstacles actually forced us further ahead than we otherwise might have been . . . as long as we concentrated on finding solutions, rather than squandering all our energy on complaints.

Conclusion Is Obvious

The conclusion seems obvious . . . to make the most of engineering, we, as people, should apply the same approach to our complaints against circumstances that we, as engineers, have used so successfully in capitalizing on the obstacles we're continually fighting in natural laws.

It's not easy to take this objective view of personal obstacles, because when people oppose us, the most natural thing is to get upset. We have all kinds of energy to pour into impatience, anger, resentment, suspicion, and injured pride; but its something

(Continued on Page 6)

Army-Navy Journal Cites NSPE Action

Activities of NSPE in strengthening the already vital role of professional engineers in the armed services are recognized in the February 28 Army and Navy Journal, unofficial but authoritative "bible" of the armed forces.

The publication credits NSPE, through its military affairs committee, with "outlining an extensive program to develop the engineering services of the Armed Forces". It reports in detail the annual report of the committee, approved during the 13th annual meeting in Buffalo, and reports fully NSPE's fears that the Officer Personnel Act, Public Law 381, 80th Congress, "contains many provisions that adversely affect engineers and the profession of military engineering."

Army and Navy Journal also reports the committee's fear that these defects make it highly probable that in any future emergency there will be an inadequate overall engineering leadership in the armed forces, and that engineers will be organized and utilized even less efficiently than they were in World War II.

Engineer Chief Asks Civic Affairs Role For Our Profession

"There is a definite place and part for all engineers and engineering groups in the nation's current community and civic progress. As a member of the engineering profession, I urge that we add to our splendid accomplishments in technical engineering the equally important service we can render in the field of civic engineering."

That's the comment of Lt. Gen. R. A. Wheeler, chief of Engineers, U. S. Army, in the February issue of "The Military Engineer."

Gen. Wheeler declares that even more important than the privileged position engineers hold by virtue of their profession are the responsibility and the challenge that position creates.

"The civilian and military engineer emerged from the war with an invaluable accumulation of technical data and engineering skill," his article continues. "This great mass of technical data and experience was given no time in which to lie idle. Circumstances put it to use immediately, at home and over the world, in the tremendous task of meeting the almost overwhelming post-war need . . . . Today it is the prime mover in the greatest era of engineering construction in history.

"In the postwar world of today, however, technical engineering, by members of the engineering profession taking an active part in community planning and public works . . . .We must agree that the members of a profession that have contributed so much to our technical development have much to contribute to the development of our community, state and national civic life.

"In peace as in war, service to the community and to the nation is a continuing responsibility. How each of us thinks and acts individually and in cooperation with others in translating America's great post-war dream into a reality will determine in large measure the evaluation which history gives to our accommplishments. The opportunity offered is one we should not neglect."

How Canada Solved Status Of Engineer-in-Training

By Dean Alan E. Cameron
Nova Scotia Technical College
Halifax, N. S.

Sooner or later after graduation the engineer is faced with the problem of employer-employee relations.

Undoubtedly, when he enters industry, he will start as a craftsman. In time, he may be dissatisfied with his economic status. He will be offered assistance to improve that status by association with fellow-workers in the industry. Almost certainly, they will be able to show him that his immediate needs can be met through association with them. Is that the right place?

The engineer and the scientist in industry today faces the decision as to where his best interests lie. Does he belong with management and the control of the working force? Is he an employee, and as such, should he depend upon collective bargaining to establish his economic status? Does he belong to an honored profession or is he a craftsman?

The professional engineer and the scientist have been defined as the entrepreneurs between industry and labor. In design, they intrepret the needs of industry to labor, and on the job they correlate the efforts of labor to the results desired by industry. The surveyor, the draftsman, the chemist, the assayer, assist in the design and control of industry for the future; in general, their efforts do not deal with the present only, but influence the future as well.

Role Played

Obviously, many of these services are routine in nature and those doing them may not realize the significance of their work in regard to the future of the industry they serve. The surveyor on highway or railway work is delineating the program for construction; the mine surveyor or sampler is gathering information for a projection of the mine into unknown regions; the chemist on daily chemical control of the steel furnace is responsible for safety in the future use of the materials. The darftsman or tracer of the plans for a bridge produces the blue prints of the future work. All these things are jobs of the moment but they are preparing for work or service in the future.

Because they are jobs of the moment, they may be filled by two types of persons:

(a) the craftsman, who through long years of training and experience, has become adept in the manipulations necessary without any deep knowledge of the science underlying the work; and

(b) the young graduate who enters the profession at craftsman's level and gathers training and experience while he does this more or less routine work.

The difference in status of these two groups of people is essentially that the first group has obtained proficiency through time and experience and has therefore climbed up to a position of some trust and responsibility; while the second group, through university training, has the fundmental knowledge to understand the why and wherefore of the work, with, perhaps, a lesser ability in its undertaking. Youth is on his side and he will use the craftsman skills he has acquired as a steppingstone to further advancement.

Basis for Payment

In employer-employee relations, however, the two groups are contemporaneous, their work is the same; the result of their work has the same value to the industry. Wages, salary schedules, economic status must be based upon the value of the work to be done —not upon the immediate personnel involved. It follows, that while the craftsman may need collective bargaining, the engineer-in-training may or may not need it, depending upon his own personal courage and initiative.

It would not be human nature if the employer engineer, using the services of these craftsman and the engineers-in-training, did not tend to make use of the higher theoretical and fundamental knowledge of the engineer-in-training and still keep him in the ranks of craftsman. When that time comes, as it will come, the engineer-in-training will find himself at the crossroads, and he must decide whether he shall throw in his lot with the craftsmen, or endeavor through other means to prove his scientific and technical worth to his employer.

These problems are being faced by the engineers and scientists of Canada today. In certain provinces, the problem has been met by the organization of collective bargaining units for engineers and scientists distinct and apart from the bargaining units of the craftsmen working in the same class of work. These developments have resulted in two definite difficulties.

On the one hand, some management, and therefore, some employer engineers, frown upon collective bargaining units for engineers and scientists. They feel that the engineers and scientists have collectively thrown in their lot with the craftsmen even though they bargain through a separate agency. On the other hand, the collective bargaining units originally set up for professional engineers and scientists only, in one province at least, have been forced by the labor courts to include in their bodies the non-professional craftsmen doing the same work. This forced inclusion is contrary to the fundamental purposes for which the engineers and scientists collective bargaining units were set up.

The great problem facing the engineering and scientific professions today is to iron out these difficulties. We, in Nova Scotia, are fortunate. The Engineering Professions act authorizes the Association of Professional Engineers to deal with employer-employee

(Continued on Page 20)

Behind The Article

Subject of the engineer-in-training is presented in a somewhat new light by Dean Cameron in this thought provoking and informative article.

The engineering profession in Canada has had more years of experience with enrollment of engineers-in-training than has the American profession. This article is based on Canadian experience, and should prove illuminating to NSPE members. Dr. Cameron, incidentally, represents the Province of Nova Scotia in the Dominion Council of Professional Engineers.

Engineers' Part in Atomic Age Told by Lilienthal

By David E. Lilienthal

Chairman,
U. S. Atomic Energy Commission

Engineers have three special interests in the atomic age:

1. Interpreting this new field of knowledge to their neighbors and giving them guidance in determining its meaning for human life and public policy;

2. Providing the know-how that is sought in manifold applications of atomic energy;

3. Advancing the new going industry largely built and operated by and presently being improved through engineering skills.

In all branches and specializations of the engineering profession, there are in the United States about 275,000 engineers. The nation's engineers comprise one of the largest groups of technically trained and technically experienced men and women in the country. They are a group of citizens who as much as any other account for America's industrial position in the world, the foundation of our military position.

Atomic energy is more than just science and engineering, it is one of the most vital of all areas of public policy, in which as a people we must make decisions affecting the course of the Republic, the peace of the world and the future of our 20th century.

If these decisions are not to be made in panic, if they are not to be masterminded or not crammed down our throats at some future time of emergency, if in short they are to be made by the democratic process, then the public as a whole must be adequately informed of the essential facts of this new force and its meaning to laymen.

This education in the essentials of atomic energy must not come from a centralized official source, but instead as far as possible from within the communities and neighborhoods of America.

Your neighbors have a right to look to you engineers, as technically trained men, for aid in understanding atomic energy so that they may better determine its meaning for human life and public policy. It is in his capacity of citizen-teacher rather than as a professional man and technician that the role of the engineer in atomic energy may prove to be the most important.

Again the country looks to you further to serve the interests of your nation and humanity. You, as much as any body of citizens, can help to dispel public confusion—a crippling confusion—as to the true relationship between secrecy and genuine security.

And your professional talent for clear, unadorned exposition and for the training of others may help to give all Americans an understanding and a feeling for the fundamentals of atomic energy. This is the bedrock that must underlie and support sensible, sound public judgments on the policy issues that increasingly center around this new force.

It would be nothing short of a major national catastrophe if, through lack of an informed public opinion, America's atomic enterprise should drift into the doldrums, should fall prey to ignorance or panic or indifference or petty politics. The engineer is well called the "enemy of error." Who, better than the engineers of the country, can supply leadership in public education in these matters, so that the country can continue to develop in this field with vigor and with a high standard of technical competence?

Formula . . .

(Continued from Page 4)

else again to force our thoughts into channels of analysis, unprejudiced judgment, enterprise, and constructive action in spite of disturbing circumstances. It takes hard work, without much let up . . . but it's worth trying. If we succeed, it means we will replace bitterness and disappointment with assurance and satisfaction. What's more, when we try it, we discover that our growth and the measure of our success increases whenever we apply reason rather than emotion to every obstacle in our path.

I certainly don't want to imply that we should never complain—far from it! A state of unruffled contentment with ourselves and our surroundings may look inviting from a distance. Yet, like a complete balance of forces, it means no movement, no forward progress, no development. Dissatisfaction with circumstances, and with our rate of progress, in itself, then is a healthy symptom. More than that, it's the initial spur to personal advancement.

Instead of resenting our various complaints as irritating barriers, we can now recognize them as the potential starting points to substantial progress.

The trouble with many of us in the engineering profession, however, is that we don't look favorably on the necessity for the personal development and readjustment that is needed if we are to get the recognition we expect.

As a matter of fact, the more you study individual cases of engineers whose progress has lagged seriously behind their engineering ability, one thing becomes increasingly evident... *technical proficiency, alone, is not enough.* In fact, too much emphasis on scientific achievement can, itself, be one of the very reasons why some engineers continue to be passed by.

As engineers, we have many fine prerequisites to success. The difficulty with many of us is that we're not prepared to make the best possible use of our equipment.

Above everything else the most widespread and useful characteristic of success is the *ability to get along with people.*

Here's a second characteristic of successful people. It's their habit of looking beyond their own department, or their own activity, continually searching for ways in which they can make their own efforts contribute more to the rest of the organization.

A third avenue to progress, in whatever direction you want to go, is traveled by the numbers of people who are consistently moving up, entirely independently of company plans and any regular promotion schedules. In their efforts to move ahead, they work as untiringly and in as many directions on personal development as any engineer worth his salt expects to work on getting the bugs out of a new process or an experimental model.

Personal progress, if it is to be lasting, must be based not on smart moves or clever scheming, but on the strengthening of fundamental qualities. The self development must start from the core of the individual.

Each of us can make more progress in engineering if we are willing to carry on a serious program of self-adjustment. By so doing, we will gain the stature and maintain the attitude which will give us capacity for progress beyond whatever problems we meet.

MAPE Meeting Scores Big Success

Minnesota Association of Professional Engineers, along with 14 other member societies of the Minnesota Federation of Engineering Societies, has chalked up another successful exposition and annual meeting.

The twenty-sixth annual event was held in February in Hotel Lowry and the Municipal auditorium in St. Paul, attracting visitors from a number of neighboring states. This is the third year it has attracted some 50,000 persons to view the latest in scientific exhibits.

T. S. Thompson, Minneapolis, was elected president of MAPE, succeeding A. M. Kircher of Mankato. Wright S. Cockroft, St. Paul, was chosen president-elect, to take office next year. Myhren C. Peterson, Bemidji, was elected vice president; Clyde C. Colwell of the Minnesota Highway department, secretary, and James F. Enz, Red Wing, treasurer. N. T. Rykken, St. Paul, was named national director of NSPE.

Six Juniors Honored

One of the highlights of MAPE's meetings was the awarding of junior memberships to six outstanding graduates of the University of Minnesota's college of engineering. They were Paul Jansen and John Meyer, St. Paul; Vernon Huso, Cottonwood; Roberta Huston, Minneapolis; R. W. Englund, Alexandria, and Thorwald Johnson, Cloquet.

Miss Huston, 21 years old, is a chemical engineer in the Minnesota department of health. She was graduated last June, the only woman in her class. Since then she has been working on a special project to determine the exact effect of well water of high nitrate concentration, now believed to be causing cyanosis in infants.

The exposition featured the latest machines and gadgets that the scientific and engineering minds of the country have created. Devices for handling freight with a minimum of effort . . . calculators with almost human minds . . . miniature radios and tuning condensers . . . the latest in arc welders . . . power saws . . . pneumatic machine controls . . . permanently oiled bearings made from powdered metal . . . heating products and wood-working machines . . . these were only a few of the attractions.

Top-drawer speakers helped to make the meetings outstanding. Dr. David B. Steinman of New York, whose projects include that city's Tri-Borough and Henry Hudson bridges and the longest single-span bridge in South America at Florianopolis, Brazil, was one of the speakers. He stated that engineering has done more for the comfort and progress of mankind than all other professions combined since the dawn of history. Credit to engineers also was given for winning World War II.

"Each war becomes more and more a contest for production," he said. "The last war was a race to see who could turn out the greatest numbers of ships and tanks and planes. We won the war because we turned out more than the enemy. The war was won by our engineers."

Shows Engineers' Shortcomings

Despite its great accomplishments, however, the engineering profession is neither understood nor appreciated by the public, he said.

"That is because engineers are diffident, inarticulate and lacking in knowledge of public relations," he said.

Dr. Charles A. Mann, head of the University of Minnesota's chemical engineering department, told the meeting that the state's natural resources "have not been tapped."

"Lake marl, found in our shallow northern lakes, makes excellent cement," he said. "Clays found in nearly all our counties could be used for making tile, bricks and pottery. Casein, now fed to pigs and calves, could better be used for plastics, textiles and brush bristles. Our flax straw could be used for making linen and briquets for fuel, our aspen wood for cellophane and plastics, and our glass sand for better than natural lubricating oil."

Henry K. Martin, ore dressing engineer for the Reserve Mining Co. which will build a taconite processing plant at Beaver Bay and Babbitt,

(Continued on Page 20)

New Honors Presented By Old Hand

All was smiles when four outstanding graduates of University of Minnesota's college of engineering received junior membership cards in the Minnesota Association of Professional Engineers. The recognition of the four pictured, plus two others not in the photograph, came during the annual meeting of the MAPE in St. Paul. A former instructor of the recipients, B. J. Robertson (NSPE), professor of Mechanical Engineering at Minnesota, handed out membership cards and advised the juniors of the professional ethics of engineering. Getting the cards from Professor Robertson are (left to right) Paul Jansen, St. Paul; Vernon K. Huso, Cottonwood; Roberta Huston, Minneapolis; and R. W. Englund, Alexandria. John Meyer, St. Paul, and Thorwald Johnson, Cloquet, were missing from the picture.—Photo by St. Paul Dispatch-Pioneer Press.

In Another Emergency—

Utilize Small Industrial Plants

By John McPherson,

Consulting Engineer
Greenville, South Carolina

The unification of our defense services is now effected by their combination into a Department of Defense. This will mean that procurements for the various services can be coordinated and combined and general policies of procurement made assumably more uniform than was possible when these functions were entrusted to several independent agencies.

The author had an opportunity during the last war to observe at first hand the possibilities that the smaller plants of the country provided and the help they could supply when their facilities were properly utilized. Today approximately two hundred thousand small plants exist, of which half could be utilized effectively. The potential production of these plants would exceed a thousand new large plants, with attendant saving in time and expense.

The purpose of this article is to suggest to our defense planning group that wide use of our small industries be studied and, if found feasible, plans be developed for this purpose.

The following is quoted from a report of "Small Industrial Plants in War and Peace" made by the writer to Small War Plants Corporation in 1943. The report is fully applicable today.

"The mobilization of small industrial plants, for the production of war materials, was due to an act of Congress that recognized their vast potential production capacity. Congress recognized that much of this capacity was not being utilized and as a consequence many small plants would die for lack of business while large industries were growing beyond the capacity of the manpower resources and the communities in which they were located.

"Failure or lack of foresight and planning on the part of our fighting services to quickly utilize these existing facilities is beyond comprehension. Ample warning of the coming storm was given even to the layman and the citizen on the street. It was naturally assumed that those branches of the services had carefully compiled, classified, planned, for the use in case of war, all the productive facilities of the Nation. They stood ready, equipped and manned, and could have gone into production on short notice.

"Much production was delayed and vast expenditures incurred to duplicate facilities that were already in existence. No one questions that great expansion in industry was necessary to produce materials of war, but it is reasonable to suppose that had existing facilities in small plants been utilized, billions in expenditures would not have been necessary and much production obtained sooner if the small existing plant had been fully used in the war program.

"Total use of these facilities was doubtless responsible for production that enabled Great Britain to carry on during its darkest hours. Their wide variety and distribution make them less vulnerable to attack *and in any post-war program of preparation and defense they should bulk largely in our plans.*"

Advantages Cited

Everyone hopes that there will be no more wars, but past history and world conditions today do not warrant the hope that wars have ended. It is certain we cannot escape the effects of the next one. Large plants and our great centers of industry will be prime targets. Thousands of small scattered plants will be difficult to destroy and may provide the production needed for survival.

The marshalling of America's productive facilities and planning for their integration and use in times of national emergency seem so obvious that everyone would suppose that some such provisions have always existed. Our national defense agencies have made surveys of many plants but it is doubtful if the information collected was ever coordinated where it was of any real value in our war efforts. My hat is off to the military and fighting efficiency of our armed services; they are the best in the world. They are not, in my opinion, production experts, as the very nature of these organizations makes it impossible.

Modern war depends on production, and the side with the greatest productive capacity will always be victorious if it is effectively utilized. The problem is how to obtain maximum production in the shortest possible time when emergencies occur. As production is a plant and manufacturing function, it should first come from the existing plant facilities, supplemented by new and special facilities where necessary. This sounds very simple, and in theory it is, but putting it into effect is bafflingly complex and difficult. While modern war requires almost everything that can be produced, it especially needs the coordinated brain and business resources to accomplish maximum production in the shortest possible time.

The nation's engineering societies can quickly supply in classified form the bulk of engineering talent available. The construction organizations can do the same. The basic industries such as metals, chemicals and textiles can be quickly geared to war production. But one vast portion of production resources has been generally neglected, or used only to a minor extent. This is the many thousands of small plant facilities that exist in America. It is the effective mobilization and use of this group that is particularly desirable, if it can be done, if America is to fight another war. If another war comes, it will have to be done if we are to survive.

Small Plants' Part

Can America's vast small plant resources be effectively used? It would not mean that many great industrial expansions would not be required. Highly specialized products require specialized plants to produce and assemble. They further need millions of parts to feed them. It is there that small plants can begin to fit into the picture if their resources are utilized. As the late war progressed and neared its termination, thousands of small plants were producing, but it took nearly two years of valuable time to do so.

Is this time lag necessary? Cannot plans, procedures and programs be prepared in advance of emergencies to

utilize immediately our small facilities effectively? Probably many will say that it is not posible and only the exigencies of war can dictate the methods necessary to get the production required.

One thing is certain—some kind of planning will be necessary if an emergency arises. It may be good or bad planning, but certainly not as good as is possible when careful study is given to it in advance. Can planning be done in advance and before the emergency arises? Some steps which seem obvious are:

(1) An up-to-date census, schedule and location of every plant in existence — its productive facilities and equipment; its normal range and volume of production; its personnel and experience. This will be a continuing operation, requiring frequent revision to keep it up-to-date.

(2) A classification of these plants into categories of production, with estimated production to be expected from them.

(3) A continuing estimate of the volume of staple supplies required as distinguished from the highly specialized war procurement items that will be dictated by the time and events of an emergency. Much can be determined in advance.

(4) A greater peace time utilization of small facilities by our procurement agencies instead of allocation of the bulk of it to large and specialized plants. This will doubtless be more expensive, but the resulting know-how would be priceless.

(5) A detailed analysis of all known procurement items into component parts or sub-assemblies, with detailed drawings and specifications where suitable for small plant production.

(6) Encouraging with financial aid to small plants and, if necessary, the formation of potential plant poolings for emergency cooperation.

(7) A planned program for the use of each plant to determine conversion or changes required to fit it into its most suitable production schedule. Each plant should know how and what it should do when the emergency arises.

(8) Provide means of supplying technical information and research service to eligible plants, selected for use in emergencies.

(9) New and old industrial projects that have definite defense value should receive aid and encouragement through special tax exemptions. In other words, provide some incentive to encourage interest and participation.

Aid To Protection

The maximum utilization of small plants provides a desirable scattering of facilities and reduces the hazard of destruction to the minimum. This could be vital, and provide the difference between victory or defeat.

It will not be denied that any plans to utilize small plants will be difficult and more expensive initially. It will not be looked on with favor by our procurement officers. If effective, it will be cheaper if a war occurs and may well decide if our way of life is to be maintained.

It would seem to be a proper function of our new National Defense Department to establish a bureau or division to plan for the utilization of the small plants of the nation. Small plants would cooperate if shown how.

A program with this purpose in view requires political genius and statesmanship of the first order. It calls for assistance in the fullest measure from every segment of our industrial structure. That such assistance will be forthcoming when the importance of the job is appreciated by American businessmen is a foregone conclusion.

Any program for the utilization of small industrial plants will be expensive. If war occurs the cost will not be considered. War demands speed and more speed, and time is a vital element for success.

STORY BEHIND THE ARTICLE

Engineer John A. McPherson noted a recent American Engineer article on utilization of engineers in time of an emergency, came back with his views on how small industrial plants could be used in a war emergency.

"It is very likely, if we are ever drawn into another conflict, that we will have to utilize existing facilities to survive," McPherson declares. "Time will not be allowed to build new ones. I think this is a subject that should be of interest to all engineers."

American Engineer Has New Editor

Appointment of a new member of the Washington staff of NSPE has been announced by Paul H. Robbins, executive director.

Named to the staff is Franklin F. Page, who will serve as editor of The American Engineer and will handle public relations for the society. Page most recently has been a member of the public relations staffs of Standard Oil Co. (Indiana) in Chicago and Ford Motor Company at Dearborn, Michigan. He was in public relations work in Washington previously as director of public relations for National Aeronautic Association.

Franklin F. Page

A resident of St. Paul, Minn., for 26 years, Page served for five years as editor of Northwest Contractor and Engineer, Minneapolis regional construction publication circulating in Minnesota, the Dakotas, Iowa, western Wisconsin, eastern Montana and northern Nebraska.

He was associated with the United Press, first as Minneapolis night bureau manager, then as state capitol correspondent; with Columbia Broadcasting System and Minneapolis radiostation WCCO in the radio news division; with the Stillwater, Minn., Daily Gazette as city editor; and with the St. Paul Dispatch and Pioneer Press as aviation editor and writer.

He is a graduate of University of Minnesota, where he was elected to Sigma Delta Chi, professional journalism fraternity.

Legislative Committee's Report To Members

Dear Fellow Member:

The calendar of legislation of interest and importance to professional engineers has been reduced by one item which has occupied the time of the Senate for the past several weeks—the Great Lakes-St. Lawrence Seaway and power project. By the decisive vote of 57 to 30, the Senate avoided a "black and white" determination on the issue by voting to send the legislation back to the Senate Foreign Relations committee for further study. This legislative device permitted the opponents to gain their point and saved some of the solons the necessity of casting a direct vote on the issue.

Even the strongest supporters of the Seaway project concede that the action of the Senate definitely "kills" the legislation insofar as the 80th Congress is concerned. Senator Wiley of Wisconsin, principal leader for the Seaway project, announced after the vote that the proponents would not try to get the bill out of committee this year. The defeat of the 2,347-mile Seaway legislation was generally expected despite the strong support of President Truman and Republican Leader Senator Arthur Vandenberg, president pro tempore of the Senate. The vote cut across both party and geographic lines, but in general the chief opposition came from the senators representing East Coast and Gulf ports.

Engineers and Marshall Plan

As the so-called Marshall Plan moves toward approval in Congress, engineers are expressing increased interest in the administrative features of the program, particularly with regard to the proper utilization of engineering skills in the reconstruction work. After extensive hearings, the committee bill has been introduced by Senators Arthur Vandenberg, (R., Mich.), chairman of the Senate Foreign Relations committee, and Tom Connally, (D., Tex.), ranking Democratic member of the committee. The legislation provides a Public Advisory Board of not more than twelve members who are to be selected from citizens of "broad and varied experience in matters affecting the public interest" and who will meet at least once a month to advise and consult with the administrator of the program with respect to general or basic policy matters.

The view that professional engineers should be properly utilized in the administration of the European Recovery Program was brought to the attention of the Senate by Senator Ralph Flanders, (R., Vt.) who introduced in The Congressional Record the petition of NSPE in this respect.

That the Public Advisory Board should contain engineering skills is indicated in a communication from Senator Vandenberg, who upon receipt of the NSPE petition, advised that NSPE had presented a "most helpful" point of view and stated that he would bring the petition to the attention of the administrator when the legislation is adopted and the organization to administer the program is established.

The importance of the Public Advisory Board is seen from the requirement of the legislation that the board must be appointed by the president subject to the approval of the Senate. In addition to the Public Advisory Board, the administrator is given authority to appoint other special advisory committees and it may well be that technical advice will be obtained from special committees operating in their specialized fields.

Road Construction Urged

Additional pressure for a continuation of the Federal-aid highway program has come from President Truman, who in a special message urged Congress to authorize the expenditure of one billion dollars for the purpose of helping the states rebuild and modernize highways.

The President pointed out that existing authorizations will substantially be committed by the end of 1948 and although construction will continue for at least two years thereafter, it is necessary to extend the authorization in order that the states may plan for future planning and construction.

The president's specific recommendation was that the program be extended to cover the fiscal years 1950 and 1951 at an annual rate of $500-million.

A number of House and Senate bills are already receiving consideration in this respect and it seems likely that some legislation along this line will be adopted at this session. The latest bills on the subject are by Senators Langer, (R., N.D.) and Cordon, (R., Ore.). Senator Cordon would authorize $500-million per year with no cut-off date and one of Senator Langer's bills is to the same effect. However, another bill by Senator Langer would authorize the same amount starting for the fiscal year ending June 30, 1950 and running thereafter for the next three successive fiscal years.

National Science Foundation

As the final session of the 80th Congress progresses there is as yet no indication as to whether an attempt will be made to adopt the National Science Foundation legislation, which was passed in the first session but vetoed by the president on administrative grounds. The only new activity on the Science Foundation has been the introduction of two new bills in the House. A compromise proposal by Representative J. Percy Priest, (D., Tenn.) would have the Director of the Foundation appointed by the president and his powers and duties prescribed by the nine-man executive committee.

The latest proposal is by Representative John W. Heselton, (R., Mass.) who proposes the same administrative pattern that caused the president to veto the legislation previously passed. His bill calls for the director to be appointed by the Foundation composed of twenty-four persons who are eminent in the fields of fundamental sciences, medical sciences, engineering, education, or public affairs. Both bills prescribe substantially the same responsibilities and activities for the Foundation as contained in the vetoed legislation. The chief difficulty in obtaining approval of the legislation is not in the substantive portion, but rather in the administrative organization. There is no indication that the president will retreat from the views expressed in his veto message that the administrative features must be within the scope of the normal executive responsibility.

Cordially yours,

Frederick W. L. Hill

Member State Societies N. S. P. E.

Officers and Directors

Arkansas

Pres., Max A. Mehlburger, 5417 Canterwood, Little Rock; *Nat. Dir.*, L. N. White, 1906 Main Street, Little Rock; *Sec.*, Victor C. Anderson, 329 Gazette Building, Little Rock.

Connecticut

Pres., Clarence N. Wiley, Box 509, Milford; *Nat. Dir.*, James D. Skinner, 127 Collingwood Avenue, Bridgeport; *Sec.*, L. Morton Reed, 42 Florence Avenue, Devon.

District of Columbia

Pres. and *Nat. Dir.*, Herbert Manuccia, 3900 Mt. Vernon Avenue; *Sec.*, Charles H. Jennings, 3082 South Woodrow, Arlington, Virginia.

Georgia

Pres., Donald D. Beach, P. O. Box 4569, Atlanta; *Nat. Dir.*, Roy S. King, 1293 Oxford R., N. E., Atlanta; *Nat. Dir.*, W. P. Kennard, Bankers Ins. Bldg., Macon; *Sec.* Ray L. Sweigert, Georgia Tech, Atlanta.

Illinois

Pres., E. E. Cooper, 1588 W. Macon St., Decatur; *Nat. Dir.*, W. A. Oliver, 201 Enginering Hall, Urbana; *Sec.*, H. E. Babbitt, 204 Engineering Hall, Urbana.

Indiana

Acting Pres., Chester Lichtenberg, 4624 Tacoma Ave., Ft. Wayne; *Nat. Dir.*, M. W. Cameron, R.R. 1, Box 105-A, New Augusta; *Ex. Sec.*, J. M. Wilson, 10 West Ohio, Indianapolis 4.

Kansas

Pres., Murray Wilson, 215 W. Ash St., Salina; *Nat. Dir.* C. Y. Thomas, P. O. Box 604, Pittsburg; *Sec.*, E. E. Larson, Court House, Lawrence.

Maryland

Pres., Harry L. Katz, 3212 Gwynns Falls P'k'w'y., Baltimore 16; *Nat. Dir.*, Russell B. Allen, 4610 Hartwick Rd., College Park; *Ex. Sec.*, Stewart W. Parker, 511 Murdock Rd., Baltimore 12; *Sec.*, Dewitt Swartz, 414 Lake Avenue, Baltimore.

Massachusetts

Pres., George E. Fox, Chapman Valve Mfg. Co., Indian Orchard; *Nat. Dir.*, Raymond C. Newton, 157 Federal St., Boston; *Sec.* Robert A. Spence, Harvard University, Lehman Hall, Cambridge 38.

Michigan

Pres., Otto H. Hall, Dept. of Conservation, Lansing; *Nat. Dir.*, Ivan N. Cuthbert, c/o Smith, Hinchman & Grylls, Inc., 800 Marquette Bldg., Detroit 26; *Sec.* W. C. Berryman, 507 Woodrow, Lansing.

Minnesota

Pres., T. S. Thompson, Minnesota Highway Department, St. Paul; *Nat. Dir.*, N. T. Rykken, Kindy C. Wright & Associates, State Fair Grounds, St. Paul, S. L. Stolte, 1437 Marshall Ave., St. Paul; *Ex. Sec.*, Richard R. Price, 1000 Guardian Building, St. Paul 1; *Sec.*, Clyde C. Colwell, Asst. Construction Eng., Minnesota Highway Department, St. Paul.

Missouri

Pres., T. J. Skinker, 6251 San Boneta, St. Louis; *Nat. Dir.*, C. G. Roush, 101 W. 11th St., Kansas City; *Sec.*, H. J. Bruegging, P. O. Box 365, Jefferson City.

Nevada

Pres., L. J. H. Smith, P. O. Box 1, Henderson; *Nat. Dir.*, A. J. Shaver, 209 S. Third St., Las Vegas; *Sec.*, R. T. Campbell, Box 1015, Henderson.

New Jersey

Pres., James Logan, High & Evergreen Sts., Mt. Holly; *Nat. Dir.*, C. George Krueger, Box 265, General Post Office, Jersey City; *Nat. Dir.*, Leo K. McKee, 16 McLaren St., Red Bank; *Nat. Dir.*, Frank C. Mirgain, 208 Lawrence Ave., Highland Park; *Nat. Dir.*, Earl L. Daily, 451 Delaware St., Woodbury; *Sec.-Treas.*, Merton S. Adams, 9 Oakland St., Trenton; *Managing Dir.*, Charles J. Dodge, 86 E. State St., Trenton 8.

New Mexico

Pres., G. Perry Steen, c/o Univ. of N. M., Albuquerque; *Nat. Dir.*, W. C. Wagner, c/o Univ. of N. M., Albuquerque (Box 91); *Sec.*, Walter K. Wagner, 1233 North Vassar, Albuquerque.

New York

Pres., Wm. H. Larkin, c/o B. F. Sturtevant Co., 420 Lexington Ave., New York City; *Nat. Dir.*, Gardner C. George, P. O. Box 591, Albany; *Nat. Dir.*, George J. Nicastro, 200 Madison Ave., New York City; *Ex. Sec.*, George Barrows, 1941 Grand Central Terminal, New York 17.

North Dakota

Pres., Leslie A. French, 805 Eighth St., Bismarck; *Nat. Dir.*, John B. Jardine, 1910 First Ave. N., Fargo; *Sec.*, George Teskey, Bismarck.

Ohio

Pres., John D. Coleman, 2520 Elsmere, Dayton; *Nat. Dir.*, Allison C. Neff, Post Office Box 170, Middletown; *Ex. Sec.*, Lloyd A. Chacey, 63 South High St., Columbus.

Oklahoma

Pres., Clark A. Dunn, Okla. A & M College Engineering Experiment Sta., Stillwater; *Nat. Dir.*, C. S. Worley, P. O. Box 1439, Oklahoma City; *Sec.-Treas.*, J. M. Gayle, 410 Comm. Exch. Bldg., Oklahoma City; *Ex. Sec.*, W. E. Bleakley, 410 Commerce Exchange Bldg., Oklahoma City.

Pennsylvania

Pres., and *Nat. Dir.*, Ray M. Fuller, 560 N. 16th St., Philadelphia 30; *Nat. Dir.*, J. J. Paine, 1430 Euclid Ave., Pittsburgh 6; *Nat. Dir.*, Samuel Baker, 1616 Jefferson Ave., Scranton 9; *Nat. Dir.*, Thomas A. Monk, Jr., 30 S. Queen St., York; *Sec.*, Victor J. Snyder, 2400 N. 2nd St., Harrisburg; *Ex. Sec.*, Milton D. M. Peters, 25 South 3rd St., Harrisburg.

Rhode Island

Pres., Richard A. Phelan, 1063 Broad St., Providence; *Nat. Dir.*, Henry Ise, 15 Slocum St., Providence; *Sec.*, Vincent DiMase, 201 Dean St., Providence 3.

South Carolina

Pres., R. K. Rouse, Greenville; *Sec.*, A. C. Crouch, Greenville; *Nat. Dir.*, Roy A. Stipp, Greenville.

Texas

Pres., Trigg Twichel, 302 W. 15th St., Austin; *Nat. Dir.*, T. C. Forrest, Jr., Praetorian Bldg., Dallas 1; *Ex. Sec.*, John J. Ledbetter, Jr., 504 Ewell Nalle Bldg., Austin.

Washington

Pres., DeWitt C. Griffin, 717 Lloyd Bldg., Seattle 1; *Nat. Dir.*, James G. McGivern, Gonzaga University, Spokane; *Exec. Sec.*, Grover C. Gaier, 8003 Third Ave., N. W., Seattle 7.

West Virginia

Pres., Charles E. Lawall, Chesapeak & Ohio Railway Co., Huntington; *Nat. Dir.*, George W. Zimmer, Jr., Wheeling Electric Co., Wheeling; *Ex. Sec.*, Ross B. Johnston, Kanawha Hotel, Charleston.

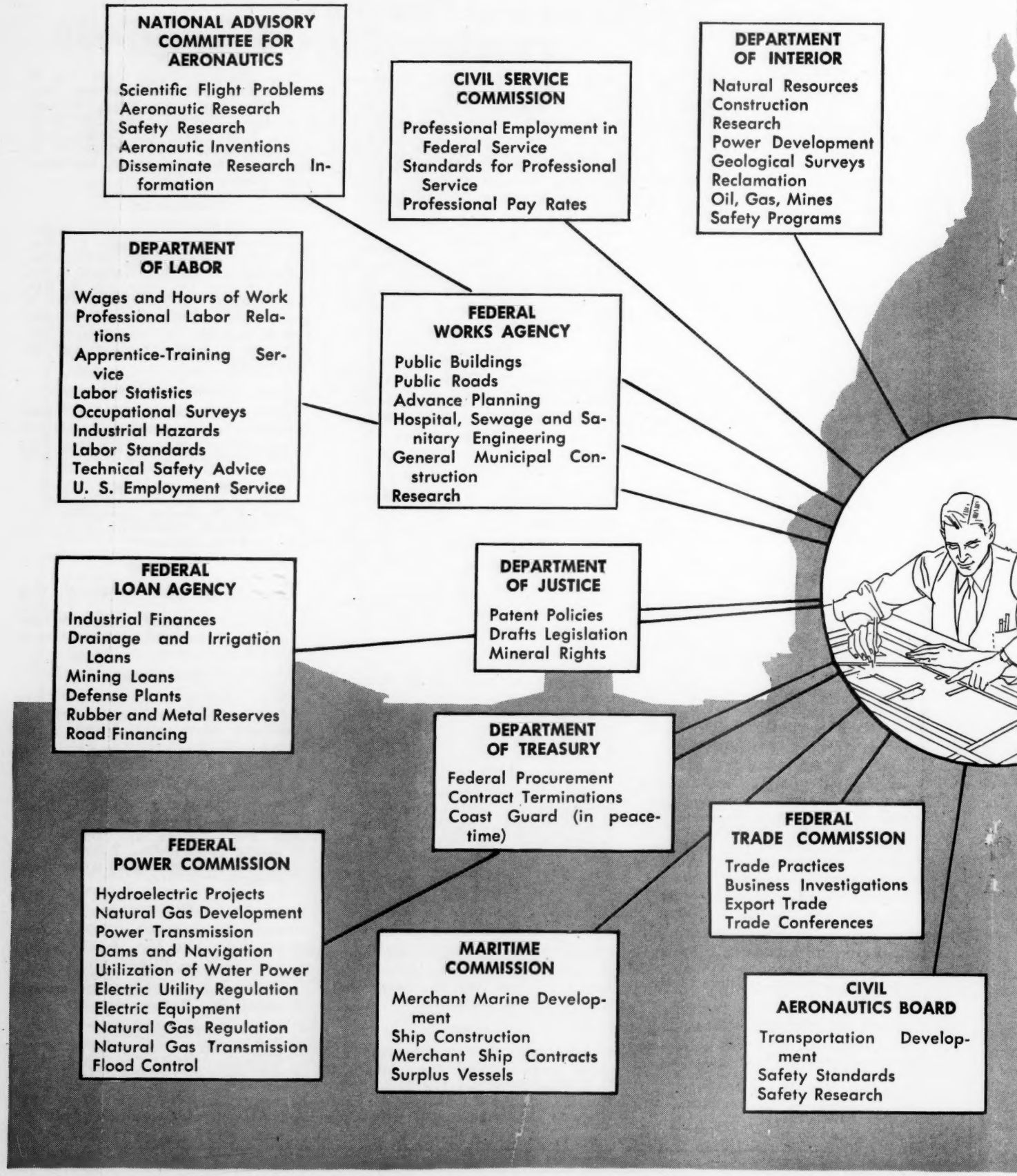
Wisconsin

Pres., George Martin, P. O. Box 247, Green Bay; *Nat. Dir.*, A. G. Behling, 2326 S. 75th St., Milwaukee; *Nat. Dir.*, Ben G. Elliott, 2302 Commonwealth Ave., Madison; *Sec.*, O. J. Muegee, 656 Crandall St., Madison 5.

Puerto Rico

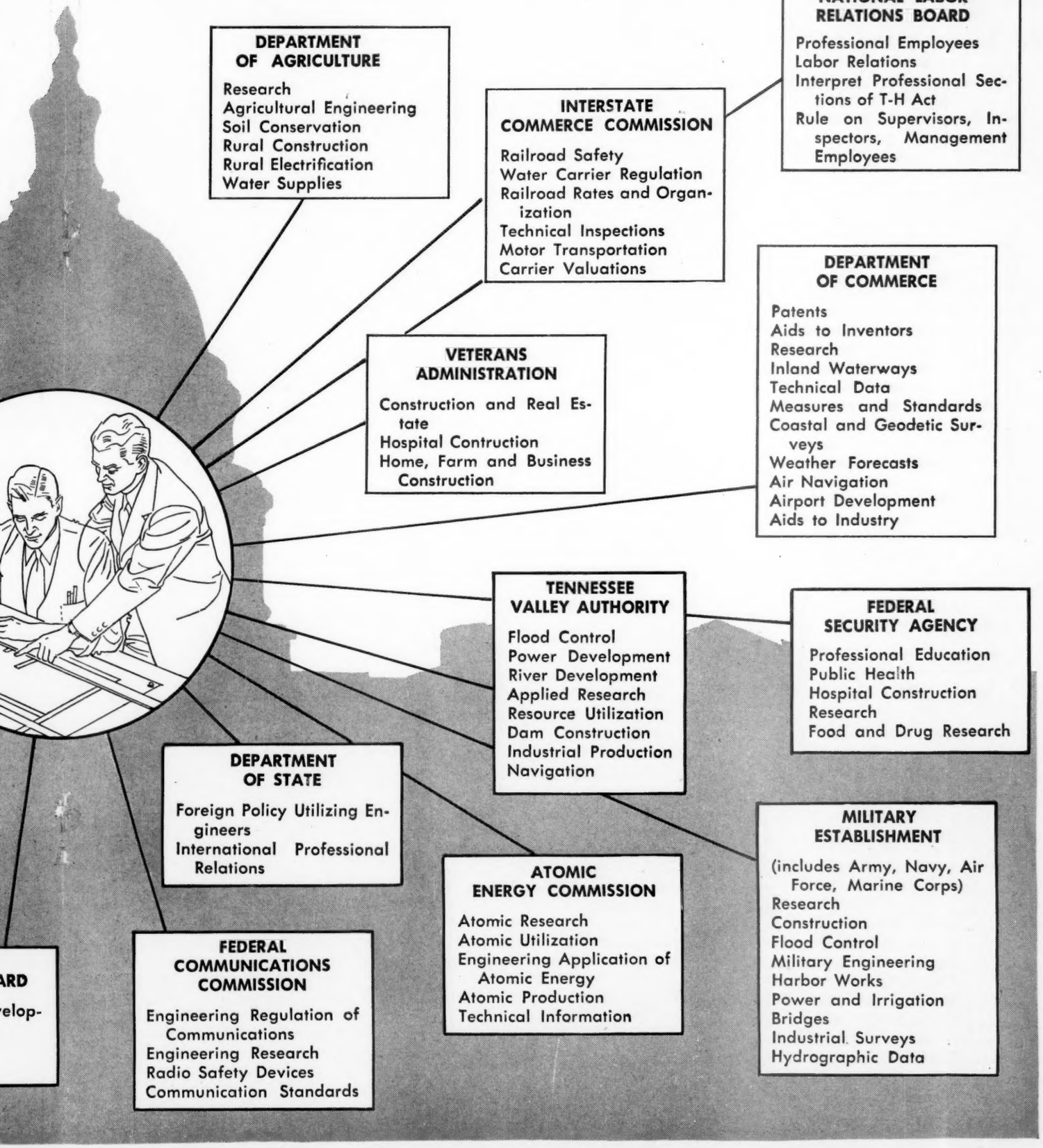
Pres., C. Calor Mota, c/o Univ. of Puerto Rico, Mayaguez; *Nat. Dir.*, Salvador Quinones, 20 E. Leland St., Chevy Chase, Md.; *Ex. Sec.*, Angel Silva, Dept. of the Interior, Santurce.

How the Federal Governm



The list of functions performed by the various Departments is necessarily incomplete. Many other

rnment Affects the Engineer



DEPARTMENT OF AGRICULTURE
- Research
- Agricultural Engineering
- Soil Conservation
- Rural Construction
- Rural Electrification
- Water Supplies

INTERSTATE COMMERCE COMMISSION
- Railroad Safety
- Water Carrier Regulation
- Railroad Rates and Organization
- Technical Inspections
- Motor Transportation
- Carrier Valuations

NATIONAL LABOR RELATIONS BOARD
- Professional Employees
- Labor Relations
- Interpret Professional Sections of T-H Act
- Rule on Supervisors, Inspectors, Management Employees

VETERANS ADMINISTRATION
- Construction and Real Estate
- Hospital Contruction
- Home, Farm and Business Construction

DEPARTMENT OF COMMERCE
- Patents
- Aids to Inventors
- Research
- Inland Waterways
- Technical Data
- Measures and Standards
- Coastal and Geodetic Surveys
- Weather Forecasts
- Air Navigation
- Airport Development
- Aids to Industry

TENNESSEE VALLEY AUTHORITY
- Flood Control
- Power Development
- River Development
- Applied Research
- Resource Utilization
- Dam Construction
- Industrial Production
- Navigation

FEDERAL SECURITY AGENCY
- Professional Education
- Public Health
- Hospital Construction
- Research
- Food and Drug Research

DEPARTMENT OF STATE
- Foreign Policy Utilizing Engineers
- International Professional Relations

ATOMIC ENERGY COMMISSION
- Atomic Research
- Atomic Utilization
- Engineering Application of Atomic Energy
- Atomic Production
- Technical Information

MILITARY ESTABLISHMENT
- (includes Army, Navy, Air Force, Marine Corps)
- Research
- Construction
- Flood Control
- Military Engineering
- Harbor Works
- Power and Irrigation
- Bridges
- Industrial Surveys
- Hydrographic Data

FEDERAL COMMUNICATIONS COMMISSION
- Engineering Regulation of Communications
- Engineering Research
- Radio Safety Devices
- Communication Standards

ARD
velop-

Many other activities affecting engineers could be added, but are omitted due to space requirements.

National, State Society & Chapter News

NEWS FROM THE WASHINGTON OFFICE

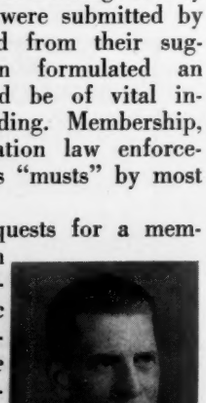
By Paul H. Robbins

Since this issue of American Engineer will be received about the time that the state presidents are convening in Detroit, it is appropriate that the members of the Society know of the items being discussed.

The agenda was determined by correspondence received at national headquarters, by the visit which various officers have made to state and local groups and in personal discussions with interested engineers. From those three sources it became apparent that there were a number of questions upon which discussion was desired. Many of those are of general interest to the profession as a whole and many are of particular interest to the member State Societies and local chapters.

The presidents themselves were polled to determine what they considered the most important subjects for discussion at the meeting. Nearly 50 different ideas were submitted by the presidents, and from their suggestions has been formulated an agenda that should be of vital interest to all attending. Membership, ethics and registration law enforcement were listed as "musts" by most of the presidents.

A variety of requests for a membership discussion were received ranging from specific membership programs through the advisability of affiliate members, creating interest of various classifications of engineers, and questions of effective procedures in promoting activities at all levels of the organization.



Paul H. Robbins

The Canons of Ethics are being discussed and the activities of the various states in publicizing and promoting acceptance and concurrence with the Canons are items of considerable interest.

There are discussions of chapter activities, including meeting programs, participation in civic projects, promotion of student interest and professional concepts, and activities among engineers-in-training.

Publications and public relations are receiving their share of attention. A number of presidents have voiced the need for greater publicity of the many worthwhile activities of NSPE committees and programs. The subject of state publications, their financing, disirable types, what they should contain, and other items concerning their management are being discussed at length. Comments regarding the content of American Engineer and suggestions for improvement will be requested.

Value of having engineers in industry registered and methods of calling those advantages to the attention of men in that field is another subject in which a number of state presidents have expressed interest.

One of the items in which every member of the profession is particularly interested is a discussion of the several plans that have been presented by various groups and committees of engineers for the more effective organization of the engineering profession. This will include discussion of activities of the newly-formed NSPE committee on Inter-Society Relations, developed to coordinate NSPE's efforts with similar activities among other engineering groups.

The work of the committee on Problems of the Young Engineer will be discussed and coordinated with the president's comments on this important segment of the engineering profession. Legislative activities from all parts of the country will be outlined, including a discussion of the desirability of greater distribution of the Legislative Bulletin, coordination of state activities on national legislation and participation of engineers in major national programs now being discussed in Congress.

Activities of the Military Affairs committee and the suggested survey of the engineering potential for use by the country in an emergency will also be outlined to and discussed by the state presidents.

A number of questions of administration and coordination of our state society activities have been presented and are receiving the consideration of the board and the state presidents.

* * *

As of course each member knows, the NSPE constitution provides that members who have not paid their dues during any year will be removed from the mailing list as of January 1 of the following year. An additional six months grace is granted to these members during which time they are retained on the rolls of the National Society. In reviewing the list of such members this year, each state society was contacted to verify the names of those members who have been removed from the mailer strip. This has now been completed and the membership records have now been brought up to date. They show the membership continued to grow at a somewhat more moderate pace than was our experience during the last few months of 1947. Nevertheless, our membership now is well over 17,000 and it is expected that the fruits of new membership campaigns will begin to show on the records in the near future.

Around The Nation With Our Members

NEW YORK . . .

Not even appearance of a hotel strike that forced a last-minute change in location kept the mid-winter meeting of New York State Society of Professional Engineers from being a success.

The meeting had been scheduled for the Hotel Ten Eyck, Albany, on February 27 and 28. It had to be moved to the Hendrick Hudson Hotel at Troy when employes of the Ten Eyck walked out.

A wide range of subjects—everything from the role of the professional engineer in the national defense to establishment of the fact that George Washington could qualify today as a professional engineer—occupied attention of those at the meeting.

Rear Adm. Lewis B. Combs (Ret.) forcefully presented the role of the professional engineer in national defense. Now head of the Department

NYSSPE Speaker

Rear Admiral Lewis B. Combs (Ret.)

of Civil Enginering as Rensselaer Polytechnic Institute, Admiral Combs is credited with organization of the Naval Construction Battalions of World War II, popularly known as the Seabees. He holds New York licenses as a professional engineer and as a land surveyor.

Pointing out that for the purposes of the much publicized "push button," warfare the United States at present has "only the push button," Admiral Combs predicted it will require between ten and 25 years to realize our objectives of preparedness. He called upon engineers to constantly seek new methods for efficient utilization of raw materials and their application.

Of particular importance, the retired officer said, is consideration of air transportation, with demand for lightness of material and design without sacrifice of strength. Another factor of engineering significance is the possibility that future military actions will be in the polar regions where extreme low temperatures upset many previous calculations of serviceability. Adm. Combs stressed that in problems of national defense and development, every technical branch of engineering is involved: the chemical, mechanical mining and metallurgical and other specialties as equally as are the military or civil engineer.

Asks Student Tie

The admiral proclaimed himself an advocate of professional licensure, complemented the NYSSPE and NSPE for their accomplishments in bringing all technical subdivisions of engineering within a circle of common objectives. But he expressed his conviction, however, that the engineering societies are not maintaining sufficiently close liaison with student engineers. He concluded with a plea that more should be done to acquaint students with provisions of the licensing act and with the ethical and public responsibilities of professional status, which can only be carried out through professional organization.

Just what steps the NYSSPE is taking to improve contacts with engineering students was explained in business meetings by Vice President William W. Perry, chairman of the committee on education. The relationship between engineers-in-training and NYSSPE has been of outstanding concern in the state because of constitutional requirements for membership in the society, Perry reported. To maintain desired contact with younger men, who have not had the required term of practical experience to qualify for full professional licensure, NYSSPE sponsored a separate organization for enginers-in-training. A strong movement is now in progress to revise the society's constitution to permit some classification of membership within the sponsoring society. Conflicting opinions as to the adviseability of such action are expected to be reconciled at the annual meeting to be held at the end of April in New York City.

Walsh Reports on Study

The case for George Washington's place among the ranks of professional engineers was stated by John B. Walsh, chairman of a special committee assigned to study the position of the nation's first president as an engineer. In the 83-page report prepared by Walsh's committee, conclusive proof was presented that Washington could meet all professional standards of his day. His license as a surveyor was issued by William and Mary College.

The report has been registered for copyright and will then be employed in a campaign to secure recognition for Washington as an engineer as well as his generally recognized capacities as a soldier and statesman.

The NYSSPE named a special committee to make a state-wide survey of the housing situation to establish the reason for high cost of homes and to suggest means which might be employed to reduce the waste involved in present methods of material distribution, outmoded building codes and in labor practices. Experts in various phases of the problem have been named by President William H. Larkin.

A comprehensive plan for acquainting the public with the aims and accomplishments of the professional movement among engineers was presented by the public relations committee, chairmaned by Harold H. Funk. The program involves first a schedule of instruction of engineers themselves, with a series of lectures and a file of recommended reading providing the basis for what the committee terms "instruction in professional science." The committee predicted that when details of the plan are completed and it is put into operation, it will provide a virtual guarantee of better economic condition for all who participate in the activity.

Reports on the progress of two pieces of legislation sponsored in the New York legislature by NYSSPE came from William C. Hahn, chairman of the legislative committee. One bill calls for a full-time, paid secretary for the Board of Engineering Examiners. The other would require recording of the 30-day periods of practice within the state by all engineers licensed in other states.

The sudden switch of meeting places came smoothly, as a result of all-out teamwork and cooperation between Albany and Rensselaer County Chapters. The difficult transfer of arrangements was made without recognizable handicap to proceedings.

* * *

Add to the list of public services performed by state associations the "missing persons" activities of the NYSSPE. The state unit often receives requests for assistance in locating American relatives of displaced persons. All that is known about the person sought, in many instances, is his name and the fact that he is in engineering work. The NYSSPE launches its search through available rosters of professional engineers, then circularizes the name and information about the person sought. The NYSSPE's efforts "frequently" aid in locating the person.

* * *

Last in a series of lectures on urban and area planning under sponsorship of Central New York Chapter and Syracuse University was held late in February, with a round table discussion summarizing information presented at the earlier sessions.

The table of experts for the final session included Sergei N. Grimm, executive secretary of the Syracuse Planning Commission; Professors William C. Lehmann and Spencer D. Parratt of the Departments of Sociology

and Political Science; Dr. Eric H. Faigle, assistant dean of Liberals Arts; and Dean Lemuel C. Dillenback, dean of Fine Arts and director of Architecture, who served as moderator.

Preceding the meeting, those attending the program attended a dinner at the Syracuse Museum.

* * *

New York County Chapter's campaign to have administrative positions in corporate agencies of state and municipal governmental units filled by licensed professional engineers when engineering problems are involved continues to bear fruit. John M. Kyle, Jr., a member of the chapter's board of directors, has been named chief engineer of the Port of New York Authority. The authority is currently undertaking several large construction projects.

* * *

Activities of an early member of the Kings County Chapter, Ehraim Freedman, in operation of a "bureau of standards" by the R. H. Macy Department Store in New York City have attracted widespread magazine attention.

Articles in "Advertising and Selling" and "The Readers Digest" have described how the store's laboratory tests products as a means of safeguarding life, health and property. Freedman has been a member of the state and national societies since 1936.

* * *

Richmond County Chapter scored a "first" at its February meeting when it received the first replica of the new NSPE insignia.

Presentation of the insignia was made by Dr. D. B. Steinman, first president of NSPE and chairman of the designing committee, to Frederick Mardus, chapter president. The event was a part of the chapter's 19th annual dinner dance, at which the honored guest was William H. Larkin, president of NYSSPE. A silver tray, inscribed with the chapter's name, was presented Larkin.

* * *

A talk on soil mechanics and a tour of Macy Department Store's bureau of testing are among recent activities of the Bronx County Chapter. The soil mechanics talk came from Prof. Daniel J. O'Connell of the School of Engineering, Manhattan College.

* * *

New York State Society is mapping plans for an intensive membership drive during 1948.

That's the report of Gust H. Karlsteen, chairman of the membership committee, who reports that by mid-February, the Society's net membership gain was running far ahead of the net gain chalked up in the first month and a half of 1947. The 238-member gain in the opening 45 days of the new year represented 144 per cent of last year's results in the same period.

Karlsteen promises that the NYSSPE and its chapters have no thought of slackening their membership increase efforts just because results to date have been successful.

* * *

First-hand inspection of the world's largest toll-call switchboards, in the Buffalo Telephone Building, was a feature of a recent tour made by members of Niagara Country Chapter. The switchboards require the services of 100 operators. At the same time, members of the chapter were introduced to other forms of message transmission—teletypes, automatic dial systems, transmission equipment for radio network programs etc. A short time before, the chapter had played host to the Western New York chapter of the American Institute of Chemical Engineers at a dinner meeting addressed by H. L. Barneby of the Blaw-Knox Corp., Pittsburgh.

Our Apologies

February issue of The American Engineer carried a special story headed, "Dr. Holbrook Honored." Through an error the story failed to state the "when, why, and where" of Dr. Holbrook's honor.

The omitted first paragraph of the story, had it not been left out, would have stated that Dr. E. A. Holbrook, dean of the School of Engineering, University of Pittsburgh, was presented with an honorary Doctor of Science degree at the mid-year graduating exercise of the University of Pittsburgh. Dr. Holbrook was president of NSPE in 1942.

PENNSYLVANIA . . .

Two records for attendance fell at the last meeting of the Philadelphia Chapter.

An all-time high attendance for both a dinner and a regular monthly meeting was set when over 200 persons turned out for a full program. They came to offer a glad hand to Ray Fuller, a chapter member who had been elected president of the Pennsylvania Society, and to offer him all-out cooperation.

They came, too, to welcome 15 new engineer members and four new affiliate associates; to hear a report on the state convention from Robert Hudson and the 17 members who represented the chapter at the meeting.

And not the least of the attractions was the appearance of Dr. George L. Beers, assistant director of engineering, Radio Corporation of America, for a talk on television. Actual demonstrations and illustrative slides on the theory of radio's growing infant were a part of the talk by Dr. Beers.

The meeting set a high mark at which affiliates were to shoot at the succeeding meeting when William H. Larkin, president of the New York Society and an authority on engineers-in-training, was to be main speaker. The affiliates were given responsibility for the meeting.

* * *

A triple-feature was offered members of the Erie Chapter at the regular February meeting.

Those attending received a banker's eye-view of general financial conditions in relation to banking practices from W. J. Flynn, president of the Bank of Erie and secretary-treasurer of the Erie Clearing House Association.

Then the state of Pennsylvania was introduced to members through the eyes of a camera. A color sound movie was provided for the meeting by Standard Oil Co. of New Jersey.

To top off the program, two representatives of a private concern presented a demonstration comparing gravity ventilators for flat and pitched roofs.

MASSACHUSETTS . . .

Employe and industrial relations and a panel discussion of engineering practices were features of two recent meetings of Metropolitan Chapter at Boston City club.

The Taft-Hartley act and its effect on the Wagner act drew the attention of Alan C. Curtis, vice president of the Scovill Manufacturing Co., in the labor relations discussion.

Participating in the panel were a consulting engineer, a sales engineer, educator, constructor and consumer.

Death took one of the chapter's most prominent members, Dr. August C. Klein, vice president and engineering manager of Stone and Webster Engineering Corp., Boston. Keenly aware of the importance of engineering registration and affiliation, Dr. Klein did much for the advancement of the profession and the society.

Metropolitan chapter, incidentally, has armed its members with available

ammunition when an engineer asks what makes membership in the chapter, Massachusetts Society of Professional Engineers and NSPE worthwhile. A complete summary of aims and purposes, plus an outline of the requirements for professional engineering registration in the state, is furnished all engineers as they become eligible for registration and membership.

ARKANSAS . . .

A far-sighted step to acquaint municipal officials with the need for obtaining professional engineering services has been taken by the Arkansas Society of Professional Engineers.

The ASPE has sent a letter to all municipal authorities in the state explaining: 1) the nature of the state society and who its members are; 2) that the procedure of bidding by firms for contracts for engineering services in connection with municipal improvements proposed to be made conflicts with the ethical practice of registered professional engineers; 3) that engineering services are rendered upon a professional basis, and in order to insure the highest standard of professional relationship, it is imperative that these services be sought by the client on the basis of competence, reputation and qualification, never on the basis of price competition; 4) that where laws do require cities to take bids for engineering services, remedial legislation should be enacted.

The society offers its services to municipalities desiring to engage professional engineering services, and suggests how municipal officials can go about locating competent assistance.

With the letter, the society sent out a complete booklet containing the constitution and bylaws of the ASPE, a membership roster and a suggested schedule of fees for various types of engineering services.

INDIANA . . .

ISPE is hearing at its monthly meeting various proposals for attacking parking and traffic problems in Indianapolis. Edward F. Pierre has presented the views of the city architects for solving the problems, and Noble Hollister, city planning engineer, was to present an entirely different plan of the City Plan Commission at the March meeting.

Pierre outlined proposals to block off four main avenues at symmetrical points just beyond the heaviest concentration of loop buildings with huge, multi-storied parking facilities. Traffic from north, east, south and west would flow to these points, where cars then would be left while the occupants would continue on to the business district on foot. Such a plan, Pierre contended, would relieve the heaviest traffic concentration points, yet bring traffic to the heart of the city.

* * *

ISPE has started a movement to form an Engineers Club in Indianapolis. A special committee has been named to study the operation of other such units which have operated successfully and will report back with facts and figures to the membership.

* * *

The two top posts in the Indiana board of registration have gone to two members of ISPE. Walter W. Walb, Fort Wayne, was named chairman of the board for the coming year, and Raymond W. Achatz, Aurora, captured the vice-chairmanship.

* * *

Other ISPE "headliners" include W. C. Bevington, Indianapolis, named to the city's board of sanitation commissioners; Frank A. Derck, Fort Wayne, named a member of that city's board of works; C. Dolly Gray, Indianapolis, elected president of the National Ready-Mixed Concrete Association (he is former chief engineer of the Indiana State Highway Commission and one of the original members and former director of ISPE); and Carl Vogelgesang, appointed Indiana member of the advisory committee of the National Rivers and Harbors Congress (he is immediate past president of ISPE and is chief engineer of the Indiana State Highway Commission).

* * *

Construction story of the famed Ledo road was described to Anthony Wayne chapter by Lt. Col. Harry Curtis, a member of the chapter. Col. Curtis served on the staff of General Pick during construction of the road.

* * *

How a big university maintains and operates its physical plant was described to members of the Lafayette chapter at a recent meeting. The information came from R. T. Hamilton, superintendent of physical plant at Purdue University.

OHIO . . .

Amendment of the constitution of the Ohio Society of Professional Engineers to provide for organization of student chapters has been voted by the OSPE's board of directors.

The student engineer is defined as one who is enrolled as a regular student in an engineering course approved by the State Board of Registration. Establishment of student chapters would have to be authorized specifically by the OSPE before they would be recognized.

The state society has inaugurated a special disability plan of sickness and accident insurance for the benefit of professional engineers who are members.

* * *

A membership drive which will bring a personal call to every unaffiliated registrant in its area has been launched by the Dayton Society.

The drive is being sparked by Marvin Olson, membership chairman, who

MUrray HILL 2-4971-4972

WIELANDT CONSTRUCTION CO.

Inc.

MASON CONTRACTORS

50 East 42nd Street New York City

THE SOLAR SHIELD

Attached to a Berger No. 6¼-R Transit

The Simplex Solar Shield is precision made of non-Magnetic materials and is designed to clamp with leather grips on the horizontal axis of the engineer's transit. It operates in connection with a prismatic eye piece for high altitude readings. This device assembles accurate field data whether one person makes the observation, or several persons take part, since the design of the shield compels the observer to do certain operations without failure; and provides positive checks on the data as recorded.

Address Inquiries to

CLAUDE HUTCHINSON WALL

Associate Professor of Civil Engineering

Registered Professional Engineer and Surveyor

365 Tibet Rd., Columbus 2, Ohio U.S.A.

has named each member of the DSPE as an acting emissary of the committee to lend assistance to the campaign. The contact work will be concentrated through members in each place of business employing engineers in the Dayton area. To kick off the drive, DSPE was able to point to presence of ten new members on the roster.

Dayton is active in still another field—the educational. William A. Dynes, chairman of the educational activities committee of the chapter, has added two Dayton high schools to the DSPE vocational guidance program, and has opened negotiations to extend the program to all secondary schools in the city. The program is designed to aid in acquainting students with the engineering profession.

That the Dayton Society will continue to play a large role in activities of the Ohio Society is shown by the fact that one of DSPE's directors, Robert E. Allen, has been nominated for one of the OSPE's vice presidencies (there are three). Three DSPE men already have served as presidents of the state society, and the local unit is out to make it four in a row.

* * *

Returning E. R. Hodson to the presidency, Southern Ohio has named a new vice president, C. K. Gordon, and a new secretary, Russell L. Parker.

* * *

Renamed president of Springfield Chapter, M. D. Woodruff will have a new secretary in Don Samuelson.

* * *

Headliners at the various chapters include Earl L. Reeb, Franklin County, named State Highway Director . . . Wilson W. Kohli, S.O.S. Chapter, named to the Tiffin planning commission and zoning board of appeals . . . George A. Shuster, Midwestern, appointed Auglaize county engineer . . . Weldon Baldwin, Springfield, getting the appointment to the city planning commission the chapter has asked . . . A. C. Neff, Miami, Don E. Patterson, Lake Erie, and C. E. McKee, Franklin County, elected trustees of the Ohio Turnpike Committee Inc. . . . Howard R. Craig, Midwestern, stepped out of the job as Auglaize county engineer to become city engineer at Wapakoneta . . . Another Midwestern member, Joseph M. Bowen, left the highway department to become county engineer of Shelby county . . . Arthur S. Langenderfer, Toledo, elected to the board of directors of the Ohio Contractors Association, with Charles E. McKee, Franklin county, re-elected secretary-treasurer . . . Clifford Ozias, Franklin County, files as a candidate for state legislature.

* * *

A campaign to raise a $1,000 fund for a public relations program has met with early success, Franklin County (Ohio) Chapter reports.

At last reports, 175 contributors already have given a total of more than $400 to the fund, with the amounts given ranging from $1 to $75. Earl Sanderson, chairman of the public relations committee, says his unit is working on creation of a speaker's bureau, development of radio programs, newspaper articles and other various contacts with the public.

The committee also is studying possibility of operation of an employment service, publishing a chapter membership directory, a ladies night or auxiliary, family picnics, certificate presentation meetings and other events.

* * *

Ohio continues to point the way for membership activities.

The state has about 12 per cent of the total registered in the United States. But membership of professional engineers in the OSPE represents nearly one-fifth of the total membership of NSPE.

* * *

Before he could complete his service as president of the Toledo chapter, Joseph A. Reece was taken by death in February. An estimating engineer for the Surface Combustion Co., Reece organized the Toledo Technical Council in 1945.

* * *

The May certificate presentation meeting at Columbus will find members of the Franklin County and Ohio State University Student Chapters meeting jointly in a "father-son" banquet. National President Alex Van Praag visited Columbus Feb. 25 and 26 for a lecture at OSU and an appearance before the chapter meeting. Charles McKee and Fred Waring are getting a speakers bureau organized.

* * *

Akron has installed two new officers and sent three more back to their offices for another year. A. B. Heiberg is the new president and John Konopka the new secretary. They, together with the veteran team mates, Sauter, D. W. Converse and J. G. Sords, were installed by OSPE President John D. Coleman. The chapter's backing of the March of Dimes campaign won a lot of favorable publicity.

* * *

Canton Chapter is finding that the Wednesday noon luncheons and refresher courses hold sustained and continued interest. C. C. Singleton, Portland Cement Association, was a recent speaker.

* * *

Campaign of Central Ohio Chapter's R. T. Burson, vice president, for professional and more frequent programs is bearing fruit. OSPE Prexy Coleman led off the series with a talk on "Engineers Participation in Community Affairs" and interest in the series has started to increase.

* * *

A banquet with more than 150 in attendance capped the annual meeting of Cleveland Chapter, which saw Tom Hindman named to carry the ball in 1948 as president and John Barrett re-elected secretary. NSPE President Van Praag was on tap for the meeting, as was the state Society chieftan.

* * *

Directors of the OSPE won't meet in Lake Erie Chapter's home area until next August, but Herb Morris, chapter president, already is mapping plans for plenty of entertainment when the time arrives.

* * *

Cincinnati Chapter members are throwing their full attention into the success of the OSPE convention when it is held there in mid-March. "Make Cincinnati the Talk of the State in '48" is the slogan the chapter is using as a target.

* * *

A ladies night and a joint meeting with the ASCE at which C. V. Youngquist of the Ohio Water Resources Board spoke have highlighted recent meetings of the Dayton chapter.

* * *

East Ohio has installed E. E. Hartford as president for the year, with C. C. Linard named to give him an assist as secretary.

* * *

Inspection of the Marion Power Shovel Co. plant was a feature of the February meeting of the Marion Chapter.

* * *

George A. Shuster and Paul M. Miller have been elected president and secretary, respectively, of Midwestern Chapter.

* * *

To gain an exchange of professional information, Maumee Chapter invited the president of the Auglaize County Medical Association in to talk on "Who Brought the Practice of Medicine Into Politics."

* * *

Atomic power, coal, oil and other sources of power drew the attention of

Muskingum Chapter when Dr. E. S. Merriam of Marietta College spoke.

* * *

With John Cunning in the driver's seat as president and John Vrbanac as secretary, North Central Chapter started off 1948 by hearing Akron's President Heiberg talk on the profession, its need for public relations and future plans of both the OSPE and NSPE.

* * *

Northeast Chapter is going to invite members of the state legislature to one of its meetings soon.

* * *

The nation's oil supply problem was the subject of a talk by N. G. Dumbros of Ohio Oil Co., Findlay, at the last Ohio Northern meeting.

* * *

MINNESOTA . . .

MAPE members are following with more than a little interest the book, "Bataan Uncensored", which is running serially in newspapers prior to publication in book form.

The basis for the interest can be found in the fact that the author, Col. E. B. Miller of Brainerd, is a member of MAPE. The narrative is a running account of Col. Miller's personal experiences as commander of the ill-fated 194th Tank Battalion during the disastrous Philippine campaign, as a participant in the infamous "Death March", and as a prisoner of war of the Japs. The book contains Miller's trenchant and unvarnished account of the conduct of the Philippine campaign, and his comment and criticisms on the manner in which policy and strategy were directed.

* * *

Report on the progress of an educational program being carried out at Rochester Junior College was one of the highlights of the District 1 meeting at Rochester. Various phases of the profession such as civil engineering, electrical engineering, architectural engineering, chemical engineering and mechanical engineering applications to industrial activities have been discussed in programs by members.

* * *

An election of officers and a lively discussion of the proposed new Minneapolis city charter drew the attention of members at the District 5 meeting. A. J. Wettels was named new president at the annual meeting; Robert Langguth vice-president; Herbert Weyer, secretary; Ralph Sprungman, treasurer; Willis Gille, member of the state nominating committee; and Charles Bodey, E. B. Doescher and John Swanberg, members of the executive committee.

* * *

Natural resources of Minnesota and substitutes for high grade iron ores held the spotlight at the Virginia meeting of District 8.

Michael Walle, Hibbing, speaker of the evening, told of deposits of titaniferous magnetites near the Canadian border which might be used as titanium for pigments and the reject as iron ore. He also discussed development of powdered iron, peat and lignite as fuel and subsequent production of low-priced electricity and the possibility of new iron deposits and use of taconites to produce ore.

From Grant Waits came a description of highway engineering and traffic regulation practices in California, Texas and Arizona.

* * *

Not even the fact that the thermometer was shivering at 23 degrees BELOW zero kept the District 9 meeting at Red Lake Falls from going on as scheduled. From the meeting came a request that the MAPE petition the next legislature to remove the maximum limit of 5 cents per mile for use of private cars by county engineers. Members agreed that the mileage rate should be left to the discretion of each governmental subdivision. Committee assignments and duties for the coming year were outlined at the meeting. Wives of the members took advantage of the absence of their husbands to gather at the home of Mrs. C. W. Turnell for dinner and a social program. Turnell is district chairman of the project committee.

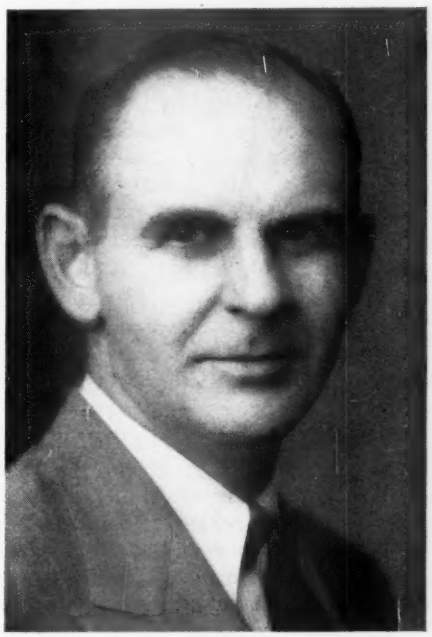
* * *

A member of MAPE, Marcus O. Giertsen, has been named bridge engineer of the Minnesota Highway Department, succeeding another member, E. J. Miller, who died.

* * *

GEORGIA . . .

City of Columbus has chosen a professional engineer to serve as its city manager.



WILLMAN

The selected official is J. A. Willman, who is a charter member of the Columbus Chapter and also is chapter vice president. He also is a director of the Georgia State Chapter.

THE WIESNER-RAPP CO., INC.

Designers and Builders
of

Chemical Processing Equipment
and
Textile Finishing Machinery

212 WINCHESTER AVE. BUFFALO 11, N. Y.

KENNEDY-RIEGGER DRILLING CO., Inc.
Diamond Drill & Core Borings
TEST BORINGS
5418 Post Road New York City
Telephone KI 9-8458

AEROFIN
CORPORATION
Syracuse New York

DISTRICT OF COLUMBIA . . .

Annual smoker of District of Columbia Society was voted "a big success" by those attending.

The event, held at Potomac Boat Club, was very well attended. Milton Lunch, legislative analyst of NSPE headquarters, briefed members on the District of Columbia registration bill now pending in Congress. Then the Society got down to the serious business of giving away the evenings prizes —a new hat to Paul Dell'Aria, hams to W. A. Ruth and Melville Brown, a table lamp to John Yevick and a half-dozen cocktail glasses to V. J. Richter.

Congress Gets NSPE Marshall Plan Plea

Request of NSPE that Congress specify presence of professional engineers on any boards or other agencies administering Marshall program relief and rehabilitation was carried to the Senate February 20 by Senator Ralph E. Flanders of Vermont.

Himself an engineer, Senator Flanders read into the record the resolution adopted at the Buffalo annual meeting of the NSPE covering membership of professional engineers in agencies responsible for carrying out the Marshall plan of aid to Europe.

He also presented to the Senate a petition of the Society which declared:

". . . the European recovery program will not accomplish its avowed purpose of rebuilding the economy and productive capacity of the free nations of Europe unless it is administered with the aid and assistance of those persons who are qualified by training and experience to apply the technical principles which have raised the productive capacity of our Nation to the highest point in the history of the world.

". . . one of the primary responsibilities of the administering body will be to utilize the resources of our Nation . . . in order that the production, distribution and communications of the European nations which receive our aid shall be raised to the point where such nations may become self-sustaining in their economy. We believe that this integrated program of technical assistance may not be fully effective if it is not guided by those who have demonstrated similar achievements in our own Nation.

"We therefore urge that in the administration of the European recovery program there be provided the advice and services of registered professional engineers to assure the full and effective use of our technical assistance."

The petition and a copy of the annual meeting's resolution was referred to the Committee on Foreign Relations by president pro tempore Arthur Vandenberg, (R. Mich.) who is chairman of the committee.

MAPE——

(Continued from Page 7)

Minn., said the 50-million dollar plant, when constructed, will send 2,500,000 tons of magnetite containing 63 per cent iron to the steel mills annually.

Bruce Williams of Joplin, Mo., consulting engineer and a director of NSPE, gave an inspiring and enlightening talk on the subject, "Need of a Grass Roots Engineering Organization at the National Level."

Melchoir Palyi, consultant economist for Central Life Insurance Co. of Chicago, warned that as long as Russia controls eastern Europe, European stabilization and normalization is out of the question.

Dr. O. E. Buckley, president of Bell Telephone Laboratories, told of new inventions which speed long distance calls. He said that the "surface has only been scratched" in use of radio telephones for contacting moving vehicles.

NEW PRESIDENT

L. N. THOMPSON

Other speakers included Senator Joseph Ball; Dr. Donald Hughes, director of the nuclear physics research division of Argonne National Laboratories; John M. Cook, Northwest Airlines advertising director; Blake D. Hull, national president of AIBEE; Otto de Lorenzi, New York, Combustion Engineering Co. education director; Robert Wilson, Iron Range Resources and Rehabilitation commissioner; James Clark, State Business Research and Development Commissioner, and others.

ENGINEER-IN-TRAINING

(Continued from Page 5)

problems within the profession. The new provincial Industrial Relations and Disputes Investigation act has excluded engineering from its provisions. Responsibility for the adjustment of economic problems of the professional engineer, and the engineer-in-training particularly, rests where it should rest, in the hands of the Professional Association.

That association can and, I am sure, will watch over the interests of the young engineer when he graduates, while he is an engineer-in-training, and will take on the responsibility of developing within the industries of the province a proper appreciation of the services of the engineers they employ in the light of the responsibilities of the position each holds.

It is important to note that the Association of Professional Engineers includes in its membership both employer and employee engineers, as well as engineers-in-training. The employer engineers are as much subject to the ethics and the discipline established by the association as are the employee engineers. With proper salary schedules set for positions of equivalent responsibility, the association can require the employer engineer in industry to justly compensate the employee engineer and the engineer-in-training for the services rendered.

In essence, as I have said elsewhere, it is not necessary in Nova Scotia for the employer engineer and the employee engineer to set across a table and bargain about economic improvement. Rather, they can gather around the conference table of the association and iron out their difficulties by mutual consent.

When working as a craftsman, the

engineer-in-training must associate with the craftsmen, and no stigma will attach to him if he supports the union of his fellow craftsmen. At the same time, if he keeps his connection with his professional engineering association, he should lose no status in the eyes of his employer fellow engineers. They will know his objectives are beyond the limited horizons of the craftsmen with whom he works; rather, they should watch him, foster him, help him, and advance him to positions of trust and responsibility.

The basic principle behind this thought is that the industry and the employer engineer in the industry, particularly, has a responsibility to the engineer-in-training until he attains full professional status. That the practicing engineer is ready to undertake this responsibility was shown at the conference on engineering education held in Toronto last year at the time of the National Conference of Canadian Universities. At that time a committee representative of the practicing engineers of Canada suggested to the educationalists a joint program whereby the young graduate would undertake a period of apprenticeship or interneship in industry.

During that time he could continue course work either by correspondence with his university or, preferably, under the direction of a member of the industry's staff authorized by the university to act as tutor or instructor. In time, the young graduate will come in contact with sufficient detailed work to warrant preparation of a thesis on some phase of the industrial activity. Submission of that thesis to the university and its acceptance, plus satisfactory work in the additional studies would qualify him for a second degree at the same time as he attains to professional rank by registration under the Engineering Professions act.

Certain industrial research laboratories and government research laboratories have accepted this principle of further training for young graduates and there is every reason to believe that the idea will be expanded into industries themselves.

The scheme is not far different from some that are now in existence for other professions. In essence, it becomes an interneship similar to the interneship in medicine or like the articled student in law.

Practical experience is gained under controlled and supervised conditions and recognition is given for the greater effort made. Professional standards are raised and the engineer-in-training is recognized as something different from the craftsman with whom he serves.

Support for NSPE Asked by Texas Official

By Carl L. Svensen, Secretary

Texas State Board of Registration For Professional Engineers

Development of a professional consciousness by engineers since the general enactment of registration laws owes much to the National Society of Professional Engineers which has provided the means for a unified profession—a means which can be used by engineers in all the varied fields of practice—a means which does not conflict with the objectives of the great founder societies or of those devoted to advancement in the special fields of engineering.

The NSPE provides the means of concentrating the bright light of true information on professional engineering as a unity and of its place in modern society. NSPE provides a means of representing all engineers at times and places where the full power and importance of professional engineering are required in the interest of both the profession and the public.

A professional consciousness develops from a sense of unity—of the oneness of a profession. Engineering as a profession has developed from many sources and as a natural consequence there have developed many branches of engineering—each a separate stream flowing its own way and carrying out its own particular purpose.

Unity Urged

With legal status now attained by engineering as a profession there has come the need for realization of a professional consciousness—that consciousness which is the basis of a unified profession of engineering. All the branches should unite in one great stream in order to present a single profession of engineering with the power and advantages which come with the consciousness of a unified profession. Such a consciousness crystallizes the understanding of professional ethics and impresses the engineer with the responsibility of the profession to the public and of his own personal responsibility to the state and to the public.

As stated in the model law the purpose of engineering registration is "to safeguard life, health, and to promote the public welfare."

The great changes in civilization have come about with the development of engineering. And as engineering has become a factor of more and more importance in everyday life and in the very existence of mankind it has approached and become the practice of a profession as set out in a Supreme Court definition of a profession:

"A vocation involving relations to the affairs of others of such a nature as to require for its proper conduct an equipment of learning or skill, or both, and to warrant the community in making restrictions in respect to its exercise."

It is in this way that the welfare of the public becomes a factor in the practice of engineering and makes it necessary to set up minimum qualifications as to competence for all who practice professional engineering in any of its relations to the public.

Until engineering registration becomes universal for *all* professional engineers, they cannot be readily identifiable as a single group as is the case with the legal and medical professions. Professional engineering is so complex and of such a highly technical character that the general public and the non-engineering administrator cannot be sufficiently informed to determine the qualifications required for the proper design and supervision of present day engineering projects.

The very nature of a profession is such that only the members of the profession possess the necessary knowledge to judge the qualifications of its practitioners. This is true of law and of medicine. It is equally true of engineering. The old maxim of the law gives the warning: "Let the buyer beware." This maxim brings out the difference between a business and a profession. In business each of the parties is assumed to be equally informed and to be able to protect his interests.

Professions Different

The conditions are quite different when we consider the professions. The professional man has knowledge and skill beyond the comprehension of the layman—a condition which makes possible the highest type of honest service and protection by the con-

(Continued on Page 24)

True Greatness in Profession Seen Requiring "New Look"

By W. D. P. WARREN

We are living in an age of greatness in the engineering profession. In the words of Christopher Dawson,[1] "the new forces that have been generated by science and industry are so gigantic that they seem to dwarf humanity and require giants to control them."

We should be very humble, however, for our greatness is primarily a greatness of technological achievement, of materialistic accomplishment and of might and power, not true greatness which has brought misery and fear to modern civilization.

Elton Trueblood[2] visions our predicament . . . . "in the great and moving drama of our age the prologue has been completed. For a generation our ablest prophets have told us that we were living at the end of an age and now we know that this analysis was correct."

In view of the tragedy facing the world today, it is urgent that we orient ourselves, and that we re-examine the materialistic theories which appear to dominate so much of the thinking of our profession. Shall we consider the great sources of power in nature as *physical* and *material* only, and as separate and apart from *moral* and *spiritual* values; on the other hand, does true greatness in the engineering profession lie in the recognition and in the application of "the laws of Nature and of Nature's God"? And what of the great unexplored field of *human* engineering?

It is inspiring to recall that the March-April, 1942, issue of The American Engineer was "given to the theme of the spiritual vocation of the engineering profession." As we witness the predicament of man, we are moved to further emphaize the *moral* and *spiritual* vocation of the engineering profession and to question the *materialistic* definitions of engineering.

For example, an early and famous definition adopted in 1827[3] was as follows: . . . . "Civil Engineering is the art of directing the great sources of power in Nature for the use and convenience of man, as the means of production and of traffic in states both for external and internal trade, as applied in the construction of roads, bridges, aqueducts, canals, river navigation and docks, for internal intercourse and exchange, . . . and in the construction and adaptation of machinery, and in the drainage of cities and towns." Note the emphasis on material things.

A later definition of engineering, with a somewhat similiar tone, proposed July 10, 1929,[3] was as follows: . . . . "engineering is the science and art of directing applications of the science of mechanics in the economic utilization of the forces and materials of Nature."

Bible Points Way

The basis of true greatness in the engineering profession was visioned by Zechariah, the great prophet of old (Ch. 4 v. 6) . . . . "Not by might, nor by power, but by my spirit, saith the Lord of Hosts."

We find that this basic concept of true greatness was incorporated in our Declaration of Independence—the very foundation of our greatness as a nation . . . . "when in the course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another, and to assume among the powers of the earth, the separate and equal station to which the laws of Nature and of Nature's God entitle them, a decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation."

It is important in the present crisis that we recall these great spiritual truths, and that we look *backward* for our creative patterns of life. Dr. John A. Mackay[4] maintains that the purely forward view has broken down today, and that we can only get a fresh start by a rediscovery of the past. It is encouraging, therefore, to find evidence of a recent return to our original concept of greatness, and to hear a challenge to the revival of absolute spiritual values.

In his inspiring article, "Man and His World,"[5] Professor Hale Sutherland challenges the engineering profession to changing concepts . . . concepts which offer hope that the revival of spiritual values will reshape civilization.

"The present world tragedy is compelling us to re-examine all our basic assumptions of life, the primary patterns on which we have been ordering our lives, individual and social. It is no longer the radical alone who is critical of our accepted ways and philosophies. We are being told by men of eminence in many walks of life that these ways and these philosophies have failed sufficiently to conform to the essential nature of things in this universe of ours and that our world conflict is the direct result of this inadequacy. These criticisms have not yet come into general agreement with a definite assertion of the way out from our dilemmas but we do not need to wait on agreement. The tragedy presses demanding answer, and with the answer, guidance to the overcoming of tragedy."

Let us again soberly consider the responsibility of the engineering profession, as visioned by Trueblood[6] . . . . "Just at the moment of history when the technical conditions for the oneness of the globe have finally appeared we are woefully lacking in the moral conditions that are required if this situation is to be a blessing . . . . The gravity of our situation in regard to means and ends becomes clearer when we realize that the present combination of means and ends is the worst of all possible combinations. *The contemporary contrast in the relative development of engineering* and *ethics* is the *most dangerous that could be.*"

Need For Human Engineering

Our "moral failure to match the technical achievements" demands a more intensive study of human engineering. In this connection it is of deep interest to note that emphasis is placed on human engineering values by William Goldsmith[7] . . . . "When will the engineer awaken to the realization that the political, social and economic

---

[1] The Judgment Of The Nations.
[2] Foundations For Reconstruction.
[3] Volume 93—Transactions ASCE.
[4] Heritage and Destiny.
[5] The American Engineer—March-April 1942.
[6] The Predicament Of Modern Man.
[7] Civil Engineering—August 1947.

effects of a TVA so far transcend the engineering aspects of that remarkable project as to render them relatively insignificant, magnificent as they may be from a purely technical point of view? The time has come for the engineer, the trained man of science, to leave the seclusion of his laboratory and drawing board, to look at the world about him, and to apply his scientific training and experience to the understanding and solution of the human problems of mankind."

Other leaders of today recognize the truth that engineering problems cannot properly be solved without due regard to the human element. For example, Melvin J. Evans [8] clearly demonstrates that the predicament in which too many of us have found ourselves is due to the fact that we have developed the laws of things, and neglected the laws of man.

In a time of greatness, it is inspiring to note that Evans is one of a group of key executives which meets semi-annually for an intensive study of modern business management, made vital and successful through Christian principles . . . . a practical example of human engineering applied in the home, in industry and in the community.

Pitkin Issues Challenge

Another author and historian, Walter B. Pitkin, [9] also challenges the engineering profession . . . . "If only some genius would write a complete moral system based on sound engineering! . . . . After fifty, people need sound human engineering more than anything else."

The simple truth is that people need sound human engineering not only after fifty, but from college days throughout life, and particularly is this true in the engineering profession. Human engineering is as yet a great unexplored field and one which appears to embody much of the wisdom of the ages. A knowledge of human engineering gained through education in our colleges is fundamental to true greatness in the engineering profession.

[8] It Works—Human Engineering.
[9] The Best Years.
[10] A Scientist's Approach To Religion.
[11] Christ and Man's Dilemma.
[12] A Time For Greatness.
[13] New York Times.

The great Christian philosopher of history, Dawson, challenges the "materialistic dogmas" of the engineering profession . . . .

"The problems of power cannot be solved by power alone, nor can they be solved by science, since science has become the servant of power. Liberty and reason are being destroyed by the powers that they created and humanity is slipping blindly and helplessly towards the abyss. For humanity cannot save itself by its own efforts. When it is left to itself it perishes, and the greater its power and material resources, the more complete is the catastrophe . . . This is the greatness and misery of modern civilization—that it has conquered the world by losing its soul, and that when its soul is lost it must lose the world as well."

The related values of the spiritual and material are interpreted by the scientist, Carl Wallace Miller, [10] as follows: . . . . "The progress of society must, therefore, be along the *complementary paths* of *scientific research* and increased *moral understanding* and appreciation."

Asks New Approach

With characteristic keenness, George A. Buttrick [11] cuts to the heart of our engineering problems . . . . "We must turn our eyes from mechanisms to life, and keep mechanisms for our servant, not for our master. This duty devolves on universities. They should no longer stress *science* and *technology* at the expense of the *arts* and *humanities;* and they must no longer meet in dull silence that vitality called religion."

We have neglected greatness for too many years, and now as we witness "the upheaval of the old order and the birth of a new", we are surprised and humbled to learn that many of the great Christian philosophers, historians and prophets are agreed in their judgment and in their *blame* of *our narrow materialistic* philosophy. The words of Herbert Agar [12] apply with particular emphasis to the engineering profession . . . . "We are caught in the position of highest responsibility at the moment of our world's supreme test."

But, if the engineering profession is to rise to the heights of true greatness, very costly commitments devolve upon it.

First: The engineering profession must recognize the fact that "we are living at the end of our age", and that whether we recognize it or not, we have a *dual* responsibility for directing the great sources of power, both *spiritual* and *material*, for the convenience and *benefit* of man. Engineering education must be developed "along the *complementary paths of scientific research*, and increased *moral understanding* and appreciation."

Second: The profession must re-examine its obsolete definitions and interpretations of engineering. A new definition must be adopted, and a new obligation assumed, in accordance with our great spiritual heritage, a basic concept . . . "Not by might, nor by power, but by my spirit, saith the Lord of Hosts."

Third: In this time of deep crisis our profession must apply its "scientific training and experience to the understanding and solution of human problems of mankind."

Fourth: The atomic age offers a new challenge to true greatness in the engineering profession. In the words of Rex Stout [13] . . . "The days have now come which not only try men's souls, but weigh them in the balance and assay their true worth." This is the time for the rediscovery of the spiritual, and for a renewal of faith—faith in "the laws of Nature and of Nature's God."

The present challenge to the life of our civilization demands a new emphasis on spiritual as well as material resources, and on human engineering. True greatness in the engineering profession demands a new vision, a new definition and understanding of engineering, and a new concept in engineering education, based on "the laws of Nature and of Nature's God".—The Author.

NSPE Support ——

(Continued from Page 21)

scientious and trustworthy professional and at the same time makes equally possible unsafe and uneconomical service if confidence is given to the unscrupulous or unqualified operator who poses as a professional engineer.

The truly and professionally conscious engineer occupies the position of a protector to guard the interests of his client and the public. This is the purpose and meaning of an all inclusive engineering registration act—it identifies the members of a professionally conscious group and places upon them the responsibility which comes from a legal status.

The responsibility is for the future and this rests upon those who plan today. Results do not happen, they must be planned. The importance which engineering has in our everyday life and in the future development of civilization is or should be apparent to everyone. In this, the matter of professional engineering as a legalized profession cannot be ignored —its relations to the affairs of the public are such as warrant, yes to necessite, "the community in making restrictions in respect to its practice."

All states have laws tending toward providing more adequate protection to which the public is entitled in connection with the practice of any profession wherein life, health, and property are involved. Changes in laws are in the direction of greater uniformity with those of other states as the need becomes evident. All of this, of course, is the responsibility of each state to protect its citizens from unqualified practitioners who may enter that state. Most states now recognize that responsibility.

Engineering has to do with the protection of life, health, and property by insuring minimum qualifications for those who practice. The scope of engineering is great and involves so much that some means of identification of the qualified is absolutely necessary. The name "engineer" has been loosely used. The need for legal identification has come about as it did for other professions.

But it may be said that the qualifications of certain engineers are known because they have practiced engineering successfully and that their work has stood the test of use. Certainly this is true and such engineers would be registered under an *all inclusive* engineering registration act. They would be given that recognition which is rightly theirs and which labels them as members of a legalized profession just as doctors are identified for the protection of the public.

This would bring about that professional consciousness in the engineers, that ethical responsibility, that sense of unity, which is one of the greatest factors in the protection of life, health, and property by the identified members of a profession.

Isn't it, then, wise to look to the future and isn't now the time to make provision for the future?

As the value of the protection afforded the public by the registration of all professional engineers is realized and understood, there has been progress toward improving the laws and toward greater uniformity. In contrast with this record of progress, we find that no registration act has been removed from the statutes. All progress has been in the opposite direction —that of greater protection from the unqualified and toward closer cooperation with other states.

Must Work Together

Engineers are finding more and more that they must work together and with the growth of professional consciousness they realize the importance to themselves and to the public of a unified profession—all leading to greater protection for the public.

Society has a large investment in universities, public health agencies, highway projects, utilities, and public engineering boards, commissions, etc. The public has a right to expect that there will be effective social use of these investments—that there will be a means to insure safety and to insure protection against wasteful financial outlay. This, of course, points to registration of all engineers and the development of a high degree of professional consciousness.

The fundamental prupose of the National Society of Professional Engineers is to represent and to speak for a unified profession of engineering, and yet be a society built up from the individual member. The functions and objectives of NSPE are not in conflict with the technological societies but have to do with "the advancement of the public welfare and the promotion of professional, social and economic interests of the engineer by means of education, legislation and public relations and the establishment and maintenance of high ethical standards.

Such a united profession with the power and influence now attained by NSPE cannot be ignored.

Educator Offers Degree Solution

By H. G. Thuesen
Head, Dept. of Industrial Engineering
Oklahoma A. and M. College
Stillwater, Oklahoma

There currently is much discussion relative to the content and to the length of courses desirable for training engineers. This issue will work itself out. There is a parallel question that may be settled prematurely, and that is the academic degree that will be conferred upon completion of the lengthened course.

At present most "four" year engineering courses lead to the Bachelor Degree. An examination of these "four" year courses reveal that they require completion of from 140 to 165 credit hours and actually require more than four academic years to complete. The requirements for curricula in the arts, business administration and such scientific fields as physics, chemistry and agriculture, commonly range from 120 to 132 credit hours. Graduates of these curricula can in many cases acquire a Master's Degree with the same number or less credit hours than does the recipient of the Bachelor's Degree in engineering.

One now frequently hears the suggestion that the Bachelor's Degree be awarded in engineering on completion of five and even six year courses. Since the Bachelor's Degree is associated with four year courses in the minds of the public, this practice appears to be selling the engineer "short."

If the engineer must have training greatly exceeding that associated with the Bachelor's Degree, it would seem to be false modestly not to award a degree which clearly indicates the extent of the academic training. Much prestige, and the engineering profession needs to build its prestige, is associated with degrees. In enhancing the engineer's training let also his prestige be enhanced by awarding degrees which conform to his academic accomplishment. In case of a five-year course, this might easily be solved by awarding the Master's Degree.

N.Y. Solons Get State Science Bill

A bill which would establish a state Science Council has been introduced in the New York Legislature.

The measure calls for creation of a 21-member council with members appointed by the governor, with advice and consent of the state senate. It provides that at least one electrical, civil, mechanical and aeronautical engineer be a member of the council.

Duties of the unit would include collecting, analyzing and compiling annually a list of scientific research projects contemplated by various state departments and agencies, and to advise the departments and agencies respecting the coordination, development and restriction of such projects; making a continuous survey and study of modern developments in all phases of science, and to advise the governor and legislature of such developments and their probable effect on the state generally and on social, comercial and industrial institutions, human health and other matters of state concern; developing a long-range scientific research program for the state; and encouraging scientific research.

WELDING CONNECTORS
Saxe System Welded Connection Units for welded assembly

Saxe Units place in position and securely hold together structural parts to be welded.

As used in many welded structures they *eliminate all hole punching*, producing an economical, rigid, safe and quickly erected structural frame.

Write for descriptive literature

J. H. WILLIAMS & COMPANY
Buffalo-7, New York
G. D. PETERS CO., Montreal 2, Canada
Canadian Representatives

The Anchor Packing Company

Pump Valves **Asbestos Products**
Mechanical Rubber Goods
Tauril **Hydroil**

100 SIXTH AVENUE
(Near Canal Street)
New York, N. Y.

PROFESSIONAL DIRECTORY

D. B. STEINMAN
Consulting Engineer
BRIDGES
Design — Construction — Investigation
Reports — Strengthening Advisory Service
117 Liberty Street NEW YORK CITY

Paul E. Schweizer
Licensed Professional Engineer
Port Byron, N. Y., Tel. 2663
Diesel Powerplant Vibration Control
General Products
Design & Development

JAMES F. FOUHY
P. E. No. 7816
Attorney and Counsellor at Law
New York, Massachusetts, Federal Bars
Engineering and General Practice
Woolworth Building **New York City**

PARSONS, BRINCKERHOFF, HOGAN & MACDONALD
ENGINEERS

Traffic Reports	Bridges
Valuations	Tunnels
Power Developments	Subways
Industrial Buildings	Foundations
Water Supply	Dams
Harbor Works	Sewerage

142 Maiden Lane, New York
Calle Sur 17 No. 27, Caracas, Venezuela
Edificio Suarez Costa, Bogota, Columbia

DE LEUW, CATHER & COMPANY
Consulting Engineers
Transportation, Public Transit and Traffic Problems

Railroads	Grade Separations
Major Thoroughfares	Expressways
Subways	Tunnels
Power Plants	Municipal Works

20 North Wacker Drive, Chicago 6, Ill.

JAMES ALLEN TUCK
Consulting Engineer
Mechanical, Civil, Electrical
41 Park Row, New York 7, N. Y.

MADIGAN-HYLAND
Consulting Engineers
28-04 41st Avenue
Long Island City, New York

WILLIAM C. KAMMERER and Associates
CONSULTING ENGINEERS
Powers Plants—Design, Supervision of Construction, Reports, Examinations, Investigations, Industrial and Public Utilities.
1900 Euclid Avenue **Cleveland 15, Ohio**

CHAS. E. HILL, Ind. Eng.
Management Consultant
Time & Motion Study—Surveys—Costs
Wage Incentives—Job Evaluation
Aptitude and Psychological Tests
Industrial Relations
Control Systems—Training
6th Floor, Law Building, Richmond, Va.

FRAZIER-SIMPLEX, INC.
436 East Beau Street
WASHINGTON, PENN.
Contracting and Consulting Engineers to the Glass and Steel Industries.

PRESTRESSED CONCRETE
Shallow, crackless construction for heavy engineering. Long span traffic and pedestrian overpasses, trestles, underground garages and tunnels, piers and bulkheads, dams, airports, containers and ducts for liquids under pressure. Detailed design and field supervision.
L. COFF, Consulting Engineer
198 BROADWAY, NEW YORK 7, N. Y.
Telephone: COrtland 7-2753

C. M. HATHAWAY *Consulting Engineer*
● PRODUCT DEVELOPMENT ● PROJECT ENGINEERING ● PRODUCTION DESIGNS
● PLANNING ● TOOL AND METHODS ENGINEERING
ELECTRICAL — MECHANICAL — ELECTRONIC
facilities for research, model work & pilot manufacturing
1315 S. CLARKSON STREET ● DENVER 10, COLORADO

ADVERTISING INFORMATION

Rates and terms for insertions in the Professional Directory and other advertising may be obtained by writing to the Business Manager, The American Engineer, 1359 Connecticut Avenue, N. W., Washington 6, D. C.

a new partner in creating

You Get Finest Prints From Your Dry Diazo Equipment With Helios Papers, Cloths, Film

Exclusive Erasing Feature!

Users of dry diazo positive reproductions frequently make drawing changes on transparent intermediate originals, rather than on original drawings. Such changes are easier and quicker on Helios† transparent prints, made on either of the amazing new K&E products—Helios Tracing Cloth or Helios Albanized* Paper—because you can actually erase image lines from them with an ordinary soft ink or typewriter eraser. No inconvenient, time-wasting eradicating fluids are needed.

A Complete Line!

You can make positive line reproductions—working prints on opaque Helios papers or cloth—directly from original drawings, layouts, letters, documents, forms. Or else you can save your originals and reproduce your positive line working prints directly from positive line intermediate originals, made on Helios transparent papers, cloth or films. These Helios materials are available in rolls or cut sheets and they can be printed and developed in the dry diazo process machine you are now using.

K & E Quality Guaranteed!

More than any other reproduction process for drafting room use, the manufacture of diazo process materials demands, from start to finish, the utmost chemical and technical skill. For this reason, a new K&E plant was established to manufacture *all* the image-forming components essential to Helios products. Helios Positive Printing, Dry Developing Reproduction Materials are offered to you with the assurance that they conform in every way to K&E standards.

Write to Keuffel & Esser Co., Hoboken, N. J. for samples to test on your own equipment, or ask your nearest K & E Dealer or K & E Branch for a demonstration. Once you've tried Helios, you will agree that it pays to be positive with Helios!

†Reg. U. S. Pat. Off. *Trade Mark

KEUFFEL & ESSER CO.

EST. 1867

NEW YORK • HOBOKEN, N. J.

CHICAGO • ST. LOUIS • DETROIT • SAN FRANCISCO

LOS ANGELES • MONTREAL

K+E

Drafting, Reproduction, Surveying Equipment and Materials, Slide Rules, Measuring Tapes.